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THE PEACE CORPS EDUCATIONAL TELEVISION (ETV) PROJECT IN COLOMBIA--TWO YEARS OF RESEARCH. RESEARCH REPORT NO. 8, THE TELEVISED CURRICULUM AND THE COLOMBIAN TEACHER.

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DATA FROM SURVEYS OF COLOMBIAN TEACHERS' OPINIONS OF THE PEACE CORPS ETV PROJECT SHOWED THAT ALTHOUGH THE TEACHERS WERE GENERALLY PLEASED, THEY FELT THERE WAS MUCH ROOM FOR IMPROVEMENT IN THE CURRICULUM AND THE TEACHER GUIDES. AFTER EACH OF FOUR SEMESTERS, QUESTIONNAIRES WERE GIVEN TO TEACHERS WHO HAD ACTUALLY USED TELEVISED COURSES IN THEIR CLASSROOMS. CONSISTENTLY, BETWEEN 80 AND 90 PERCENT THOUGHT THAT TELEVISION COULD HELP THEM "A GREAT DEAL," THE MOST FAVORABLE OF SEVEN ALTERNATIVES. INDIVIDUAL COURSES WERE RATED BY A SEVEN-PART "DISSATISFACTION INVENTORY." THE MOST FREQUENTLY MENTIONED COMPLAINTS WERE THAT "COURSES COVER TOO MUCH MATERIAL" AND THAT PUPILS COULD NOT "SEE CLEARLY OBJECTS, MAPS AND THINGS SHOWN." IN REGARD TO TEACHERS' RATING OF THE CURRICULUM AS A WHOLE, COMPUTED AS THE AVERAGE FOR ALL COURSES, THE NUMBER SAYING "EXCELLENT" INCREASED FROM 32 TO 47 PERCENT DURING THE TWO YEAR PROJECT. THE RELATIVE RANKING OF THE COURSES WAS FAIRLY CONSISTENT OVER THE TWO YEARS--NATURAL SCIENCES COURSES WERE MOST FAVORABLY RECEIVED, FOLLOWED BY LANGUAGE ARTS, MATHEMATICS, AND SOCIAL SCIENCES. TEN PERCENT OF THE TEACHERS COMPLAINED THAT THE TEACHER GUIDES GAVE INSUFFICIENT INFORMATION AND WERE DIFFICULT TO UNDERSTAND. APPENDICES INCLUDE QUESTIONNAIRE ITEMS DISCUSSED IN THE TEXT. (OH)

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THE PEACE CORPS EDUCATIONAL TELEVISION (ETV) PROJECT IN COLOMBIA -- TWO YEARS OF RESEARCH

Research Report No. 8:

The Televised Curriculum and the Colombian Teacher

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November, 1966.

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Contents **Page**

Introduction 1

Some Background 1

Organization of This Report 3

A Note on Interpretation 4

Part I: Sources of Data 5

Part II: Teacher Ratings of the Courses 9

Part III: Teacher Dissatisfactions With the Televised Curriculum 23

Part IV: Teacher Dissatisfactions With Specific Courses 26

Part V: Relationships Between the Specific Complaints and the Overall Ratings 39

Part VI: Some Comments and Speculations on the Televised Curriculum 58

Part VII: Teacher Reactions to the Teacher Guides 63

Part VIII: Other Teacher Reactions to the Televised Instruction for Pupils 70

Summary and Discussion 77

Footnotes 96

Appendices 98

- A: Questionnaire Items 98
- B: Differences Between Course Ratings and Their Statistical Significance 102
- C: Teacher Dissatisfactions with Each Course 107

Reports In This Series at end

Brief Facts: The ETV Project, and The Research at end

This report deals with the reactions of the Colombian teachers to the courses televised for primary school pupils by the Peace Corps Educational Television (ETV) Project in Colombia. During 1964, the project's first year, there were 10 such courses. During 1965, the last of our two years of research, there were 15 such courses. The television delivered the "core" of instruction, around which the classroom teacher was expected to build her own teaching, based on information supplied in advance in Teacher Guides. Among the questions for which we provide some answers are: What did the Colombian teachers think of these courses? Which did they find relatively superior? Which did they find relatively inferior? What faults did they find? What kinds of complaints were most predominant? What in particular did they find unsatisfactory with each course? How useful, and how satisfactory, did they find the Teacher Guides? What hints or suggestions for the future do the teachers' reactions provide?

Some Background

During the two years, each of the courses consisted of two 15 minute lessons each week for each year's two semesters (February-June, and July-November). For 10 courses, this meant a weekly total of 300 minutes programming, and for 15 courses, a weekly total of 450 minutes, exclusive of repeated telecasts. For each televised lesson, the classroom teacher was to provide 30 minutes of complementary instruction -- 15 minutes before the telecast, as "motivation," and 15 minutes afterwards, as "follow-up." This complementary instruction was to be planned from the Teacher Guides, which outlined the content of each telecast and gave suggestions for "motivation" and "follow-up." For each course there was a separate Teacher Guide, issued at regular intervals. For 1964, the number of televised courses with which the teacher might be expected to teach varied, depending on the grade he taught -- one course was televised for the second grade, two for the first, third, and fourth grades, and three for the fifth grade. For 1965, three courses were televised for each of the five primary grades. During the two years, between 70 and 75 per cent of the teachers taught with all the courses televised for their grade; the rest, because of the need to share viewing facilities with several others teaching the same grade, taught with television for only some of the courses for their grade.

The immediate goal of the ETV Project is to improve public primary education in Colombia. Its major vehicle is the televised instruction for pupils. However, the effectiveness of this instruction depends to a great deal on the classroom teacher. In Colombia, television brings a skilled, articulate teacher, using sophisticated approaches and a wide range of teaching aids, into an often barren classroom, devoid of books or aids. The classroom teacher seldom has more than a high school, and often not more than a grade school, education. Part of television's job is to provide a model for the classroom teacher to emulate. However, if the classroom teacher does not like what he sees, he is unlikely to take the television instructor as a model. But even more depends on the classroom teacher. He controls the exposure of his pupils to the television, and with the number of technical difficulties with TV sets and reception, the difficulties of adapting school schedules to the ETV schedule, and the lack of strong administrative direction in many schools, he can easily find it convenient to ignore the televised courses except when Volunteers or other observers are present.[1] There is also the complementary instruction which he is expected to provide. He teaches two minutes for every minute of television for each televised lesson. His teaching determines whether a televised course is to be wholly, or only partly, effective. Because of the critical role of the classroom teacher, slightly more than a half to two-thirds of the approximately 60 to 85 Volunteers in the ETV Project worked in "utilization" -- so named because their job was to consult and work with teachers in schools on the proper and effective _use_ of televised instruction in the classroom.[2] Because his role is so critical, the teacher's reactions or attitudes toward the televised courses are extremely important. It is difficult to believe that a teacher gives the same amount of effort to teaching with a televised course he judges to be relatively inferior as he does for one he judges to be relatively superior. When he has objections or complaints, they must be taken into account -- by revision of courses when called for, or by information campaigns designed to win his support. Knowledge of the teachers' opinions is a prerequisite for such action. For that reason, we tried periodically to measure teacher opinion about the courses televised for pupils by the ETV Project.[3]

Organization of This Report

This report is in several parts. In _Part I_, we discuss briefly the sources of our data on teacher opinions about the courses. In _Part II_, we present the relative degree of approval given by the teachers to each course for each of the four semesters of our two years of research. In _Part III_, we present the specific complaints or dissatisfactions, and their relative frequency, which the teachers had for the televised curriculum for pupils as a whole. In Part IV, we present the specific complaints or dissatisfactions which the teachers had with each of the courses televised during the last year of our research, 1965. In Part V, we relate the making of specific complaints to the overall rating of courses, and examine the importance of the various complaints in the overall course ratings for the different kinds of subject matter. In Part VI, we discuss and speculate on the particular characteristics and problems of the various kinds of subject matter as it was covered in the televised courses. In Part VII, we present the teachers' reactions to the Teacher Guides. In Part VIII, we cover a variety of other data bearing on teacher reactions to the televised instruction for pupils. At the end, there is a summary and discussion of our findings.

A Note on Interpretation

In this report, we deal with teachers' opinions. Their correspondence to fact is a separate question. Because the teachers found a course relatively unsatisfactory, or found a particular course deficient in some way, does not make it so. The fact, as far as our data goes, is only that the teachers evaluated the courses in a certain way. It is important to remember this when examining the data. When a course in some way is found relatively unsatisfactory by the teachers, it remains debatable whether it actually is so, and should be revised, or whether it is the teachers' opinion which must be changed. However, the fact that it is found so suggests that some kind of action would be desirable.

Part I: Sources of Data

We measured teacher opinion about the televised courses and Teacher Guides in four surveys conducted at the end of each of the four semesters covered by our two years of research. For each semester, a course was a cohesive unit, usually produced by the same director and television teacher. We considered trying to obtain opinions on individual lessons, but the scope of the televised curriculum and the difficulties of surveying made it unfeasible. Moreover, we found that teachers usually reacted to courses as a whole, and seldom discriminated among its various telecasts, probably because of their cohesiveness. As telecasting was ending for each semester, we asked the teachers to complete a questionnaire, part of which dealt with the courses. The questionnaires were delivered to the teachers by utilization Volunteers (with two exceptions -- in one survey, teachers in one area completed the questionnaires at a mass meeting, and in another survey, in one area school officials distributed the questionnaires), with a stamped, addressed envelope for mail return to the research office in Bogota, Colombia's capital, after completing them in private. Each teacher received a questionnaire covering only the courses for the grade he taught, and was asked to complete only the parts dealing with the televised courses with which he actually taught. A check of the proportion responding in regard to only some of the courses for a grade against Volunteer estimates of the actual figure indicates that the teachers followed this instruction. The questionnaire items (in Spanish or English) can be found in Appendix A.

Each survey covered all the areas participating in the ETV Project during the semester involved, with two exceptions. Bogota and the surrounding Department (state) of Cundinamarca were omitted from the survey at the end of the project's third semester (the first semester of 1965), because not enough utilization Volunteers were assigned there at that time to reach more than a few teachers, and the Department of Atlantico was omitted from the survey at the end of the project's fourth semester (the second semester of 1965), because teachers there were on strike over non-payment of salaries. For each survey, the sample was all the teachers using ETV and receiving attention from the Volunteers in each area, with the exception of the survey at the end of the project's first semester (the first semester of 1964). The sample for this survey was a subsample of the teachers responding to a survey on general attitudes and opinions about the project and education conducted before telecasting for this first semester began.[4]

The areas covered, the number of teachers responding, and the proportion of the sample responding, is as follows:

Survey	Areas	Teachers Responding**	Per cent of Sample Responding
End of First Semester, 1964	Bogota Cundinamarca*	252	87
End of Second Semester, 1964	Bogota Ibague	130	41
End of First Semester, 1965	Tolima* Boyaca* Medellin	875	72
End of Second Semester, 1965	Bogota Cundinamarca* Tolima* Antioquia* Caldas*	1,885	60

*Departments (states)
**rounded figures

The return for the end of the second semester, 1964, survey was relatively small for rather special reasons. In Bogota, the questionnaires were turned over to the Colombian school supervisors for the various zones for distribution because few Volunteers were assigned there at the time. Apparently, distribution under the auspices of these officials failed to motivate the teachers to return the questionnaires as strongly as personal delivery by Volunteers. In Ibague, the teachers went on strike over non-payment of salaries just as the Volunteers were finishing distribution, so that those teachers who did not return the questionnaires immediately simply forgot about them. Details on sampling are given elsewhere, where other survey data are presented.[5]

In regard to evaluating the courses and Guides, the respondents to each survey acted in the role of a group of judges rating a number of comparable objects on a common form. Because the form was the same for all courses and Guides in any one survey, the ratings can be compared and the courses and Guides ordered on their basis. Presumably, any group of similarly knowledgeable judges would make ratings which would order the courses and Guides in a similar way. Since teachers for each grade evaluated different sets of courses and Guides, the number rating any given course or Guide is only about a fifth of the total responding to any survey. Yet, so great were the differences in evaluation given each course that even the small return of the survey at the end of the second semester, 1964, in which as few as 19 teachers rated one course, provided interpretable orderings. Although the data from this survey are the most questionable, we feel that even these data, and certainly the data from the other surveys, provide useful information as far as the relative standing of courses or Guides is concerned. Of course, as far as the absolute per cent making any response being the same as the per cent would be if every teacher had returned a questionnaire is concerned, the estimate provided by the survey usually becomes better as the number responding increases.

In the results to be presented, there are two kinds of questions. One is the kind of question which offers a respondent several alternatives -- what, in a test, would be called a "multiple choice" question. For these, the base for per cents is the number replying to the question. The other is the kind of question which forms part of a check-list, which the respondent may or may not mark. For these, the base for per cents is all the teachers evaluating a particular course. However, if a teacher did not reply to the first question on any course, calling for an overall rating of its excellence, no other replies about the same course were counted. This was to make the overall ratings and other replies about a course comparable, by making sure that they came from the same persons, and to eliminate careless replies from teachers who did not actually teach with the televised course, for the admonition about the questions applying only to those teaching with a course immediately preceded the first question. Thus, failure to answer it was the best indication that a teacher did not teach with that course. As it turned out, very few teachers responded to any questions about a course if they did not answer the first question. Because every teacher for a grade did not teach with all the televised courses for that grade, the number evaluating the courses for any one grade varies slightly; in addition, the numbers responding decrease as the level of the grade increases, because many pupils in Colombia drop out before the fifth grade, and at each advance in grade, the number of pupils, and the number of classes and teachers, decreases.

We reported the results on the courses and Guides after each of the four surveys in great detail.[6] With each survey, we changed some of our questions in order to get more useful information. In this report, we will look at the results for all the surveys as a whole, and we will present only the data from those items which seem to be of some value at this time.

Part II: Teacher Ratings of the Courses

In each survey, the teachers rated each course as a whole by indicating, from among several choices, how many of the course's telecasts they considered to have been "excellent." We used the per cent saying that all of a course's telecasts had been "excellent" as an index of the degree of favor in which the teachers held the course. For any semester, the per cent saying all for each course can be compared, and the courses ordered from most to least in favor. The results for all four semesters are shown in Table 8:1. For each semester, the courses are listed in order of the degree of teacher approval.

It is clear from a glance at Table 8:1 that the degree of favor in which the teachers held each course differed markedly. The per cents saying all of a course's televised lessons were "excellent" ranged, for the first semester, from 13.6 to 54.5; for the second semester, from 14.7 to 68.1; for the third semester, from 27.4 to 72.2; and for the fourth semester, from 32.1 to 62.3. This is especially noteworthy for two reasons. All the courses had the same goal of instruction, all

Table 8:1: Teacher Ratings of the Courses for Four Semesters

Rating: Per Cent Saying All of a Course's Televised Lessons Were "Excellent":

Semester of the ETV Project:

First Semester (Feb.-June,1964)			Second Semester (July-Nov.,1964)			Third Semester (Feb.-June,1965)			Fourth Semester (July-Nov.,1965)		
Course	Rating	(N)*	Course	Rating	(N)*	Course	Rating	(N)*	Course	Rating	(N)*
NS V	54.5	(45)	NS IV	68.1	(22)	NS III	72.2	(158)	NS IV	62.3	(310)
NS IV	52.2	(49)	SS IV	45.4	(22)	NS IV	65.0	(143)	NS II	60.5	(377)
L I	47.1	(55)	NS V	42.1	(19)	NS V	64.0	(111)	NS V	59.5	(262)
NS III	43.4	(54)	NS III	41.1	(34)	Mus. I	62.7	(169)	Mus.I	57.5	(360)
M I	34.6	(55)	L I	40.6	(32)	NS II	55.1	(158)	NS III	52.1	(317)
M V	27.3	(45)	L II	39.2	(28)	L II	50.9	(159)	M V	50.4	(266)
SS IV	17.0	(49)	M I	37.5	(32)	L III	50.0	(154)	L III	47.0	(315)
SS III	16.7	(54)	M V	31.5	(19)	M V	43.6	(110)	L I	46.7	(377)
L II	16.4	(56)	SS V	21.0	(19)	M II	39.8	(161)	L II	46.1	(362)
SS V	13.6	(45)	SS III	14.7	(34)	L I	39.5	(167)	SS IV	41.5	(299)
						M I	38.2	(170)	M IV	41.1	(314)
						M III	37.2	(164)	M III	39.1	(330)
						SS IV	37.1	(140)	M II	36.3	(380)
						M IV	31.9	(138)	SS V	35.0	(257)
						SS V	27.4	(106)	M I	32.1	(389)

*Courses: NS = Natural Science; SS = Social Science; M = Mathematics; L = Lenguaje; Mus. = Music. Roman numeral = grade.
(N): Number of teachers responding to the question on overall excellence on which per cent is based.

employed a similar format, all had the same access to stage settings, visuals, and other paraphernalia, and the classroom teachers judging them all had little previous experience with television of any kind on which to base an opinion. Thus, there was much that would tend to place the courses on a roughly equal footing. Moreover, the teachers held a high opinion of the usefulness of television for instruction; in the four surveys, the per cents saying that television could reinforce their own teaching "a great deal," the most favorable of the several alternatives, ranged from 79.1 to 91.3. Thus, there was also a generally favorable attitude toward televised instruction that might predispose the teachers toward favorable ratings. Why was there such variation? Under the circumstances, it can be considered something of a surprise. Very likely, the teachers formed definite opinions about the quality of each course because the courses directly affected their own teaching, and involved something on which they considered themselves experts -- instruction. There is certainly little doubt that the degree of esteem in which they held the various courses for any semester differed considerably.

It is not possible to give a particular difference in percentage points between the ratings for any two courses that would always be statistically significant, for the amount of the difference required varies both with the number of teachers making each of the ratings and with the actual sizes (or values) of the per cents involved in each rating. Moreover, the difference that would be required, whatever the number of teachers and the actual per cents, is less when the same teachers are involved in making the different ratings, as is largely the case when courses for the same grade are compared, than when diffferent teachers make the ratings for each course, as is the case when courses for different grades are compared.

As result, we computed statistical tests separately for each of the possible differences between ratings for the courses for each semester. Because the teachers rating each course for a particular grade were not always the same, since some teachers did not teach with all the televised courses for a grade, and to make computation easier by using the same procedure for all comparisons, we treated all differences as if the ratings for the two courses involved had been made by independent, or completely different, groups of teachers.[7]

When there are 10 courses for a semester, there are 45 possible comparisons between different pairs of courses. When there are 15 courses, there are 105 possible comparisons. For the first semester, of the 45, 24 were significant at the .05 level or less (the chance expectation would be only two or three such differences), and 6 were significant at the .01 level. For the second semester, of the 45, 13 were significant at the .05 level or less, and 2 were significant at the .01 level. The reduced number attaining the .05 and .01 levels in the second semester is due to the smaller number of teachers making the ratings. For the third semester, of the 105, 67 were significant at the .05 level or less, and 59 were significant at the .01 level. For the fourth semester, of the 105, 63 were significant at the .05 level or less, and 47 were significant at the .01 level. Altogether, of the 300 possible comparisons, 167 of the differences (versus a chance expectancy of 15) attained the .05 level or less, and 126 (versus a chance expectancy of three) attained the .01 level.

The data appear in Appendix B. To find the absolute difference in percentage points between the ratings for any two courses, simply look at the entry where the courses intersect. The differences reaching the .05 level are starred (*), and those reaching the .01 level are double starred (**).

The fact that the teachers rated the courses for any semester quite differently, important though this is by itself, is not the only information provided by these data. Some general trends, involving courses and subjects, also are clearly discernible.

Over the two years, the Natural Science courses were always rated highly. For the first two semesters, the three Natural Science courses televised at that time are among the top four for each of the semesters. For the second two semesters, the four Natural Science courses then televised are among the top five for each of the semesters. The Social Science courses were usually rated lowly (with one exception, Social Science IV for the second semester, whose second place rating may be due to some peculiarity of the small sample of 22 teachers who rated it). For the first semester, the three Social Science courses are among the bottom four. For the second semester, two of the three Social Science courses are in the two bottom positions. For the third semester, the two Social Science courses are among the bottom three. For the fourth semester, one of the two Social Science courses is among the bottom two, and the other is in the tenth of the 15 places. Mathematics courses received a middling to low rating. For the first semester, the two Mathematics courses are in the middle of the ratings, in fifth and sixth places. For the second semester, the two Mathematics courses fall among the bottom four, in seventh and eighth places. For the third semester, the five Mathematics courses fall between the middle and the bottom, in eighth, ninth, eleventh, twelfth, and fourteenth places. For the fourth semester, one of the five Mathematics courses falls above the middle, in sixth place, and the other four fall well below -- in eleventh, twelfth, thirteenth, and fifteenth places. Lenguaje received a middling rating. For the first semester, one of the two Lenguaje courses was in third place, but the other was in ninth position, next to the bottom. For the second semester, the two Lenguaje courses were in a middle position, in fifth and sixth places. For the third semester, the three Lenguaje courses were in sixth, seventh, and tenth positions. For the fourth semester, the three Lenguaje courses were in the middle -- in seventh, eighth, and ninth positions. Music courses received a quite high rating -- for both third and fourth semesters, the Music course was in fourth place. Broadly, then, over the two years, the teachers gave the highest ratings to Natural Science courses, followed by Music, Lenguaje, Mathematics, and finally Social Science.

The course ratings, since they cover two years, also provide other valuable information. Did teacher opinion of the televised curriculum become more favorable over the two years? To get some information on this, we summed the ratings for each semester, and divided by the number of courses, to get an average course rating for each semester. We did this for all the courses in each semester, and also for only the nine courses which were televised in all of the semesters. The results appear in Table 8:2. As can be seen, the average ratings during the project's second year were considerably higher than during its first year. There are a number of possible explanations. Although the alternative which we used as an index of a course's relative standing (that all the course's telecasts were "excellent") remained the same for all the surveys, the other alternatives were changed slightly in the second year for greater clarity, and although it is unlikely,this conceivably could have affected the number of teachers choosing the most favorable alternative.[8] There also is the possibility that the trend is due to some bias in the samples, with those responding in the two surveys of the second year happening to have been relatively more favorable toward the project than those responding to the first year's surveys. However, the markedly larger numbers of teachers responding to the second year's surveys, especially when compared with the small return of the second survey in the first year, argues against this interpretation. Probably, the increase in average ratings reflects greater satisfaction among the teachers with the courses, for as time passed, teachers received more and better orientation as to the goals and workings of the project, courses and Guides were better coordinated, and there were fewer and fewer interruptions in transmission and errors in scheduling (such as the wrong videotape being telecast at a particular hour).

We also examined the range, in percentage points, between the highest and lowest ratings for each semester. For the first semester, it was 40.9 points; for the second, 53.4 points; for the third, 44.8 points; and for the fourth, only 30.2 points. The marked decrease in

Table 8:2: Average Course Ratings for Four Semesters

Rating: Per Cent of Teachers Saying All of a Course's Televised Lessons Were "Excellent":

Average of Ratings for Courses for Each Semester

Semester of the ETV Project:

Average Based on:	First Semester (Feb.-June, 1964)	Second Semester (July-Nov., 1964)	Third Semester (Feb.-June, 1965)	Fourth Semester (July-Nov., 1965)
All Courses*	32.3	38.1	47.6	47.1
Nine Courses Included In All Semesters	34.0	40.7	48.7	47.3

*N = 10 courses for semesters of 1964, 15 courses for semesters of 1965.

the range for the final semester suggests that, by the end of the project's second year, teacher satisfaction with the various courses making up the televised curriculum was becoming more uniform.

During the two years, the ETV Project revised several of the courses, attempting to improve them and meet teacher objections. From the viewpoint of the teachers, were these efforts successful? The course ratings also provide some information on this question. The three Natural Science courses (III, IV, and V) telecast for each of the semesters during the first year remained much the same during the second, with the videotapes being replayed except for a few telecasts which had to be redone for technical reasons. The two Social Science courses (IV and V) which were included in both the first and second years were changed considerably for the second year. The shift in ratings for the Natural Science courses thus provides a good standard by which to assess the shift in ratings for the revised Social Science courses. Since the courses correspond in topics covered (and in the case of Natural Science are the identical telecasts) for the same semesters of each year, we compared the shifts between the first semester of 1964 and the first semester of 1965, and between the second semester of 1964 and the second semester of 1965. For the standard, or criterion, we took the average ratings for all three Natural Science courses. We looked at the shifts for each Social Science course separately, and as an average. Again, the averages were calculated by summing the ratings for the courses, and dividing by the number of courses involved. The results appear in Table 8:3. As can be seen, there was no consistent trend in the shifts in ratings of Social Science courses when compared

Table 8:3: Changes in Ratings of Unrevised (Natural Science) and Revised (Social Science) Courses, Same Semesters, 1964 and 1965

Rating: Per Cent of Teachers Saying All of a Course's Televised Lessons Were "Excellent":

	Average of Three Natural Science Courses	Social Science IV	Social Science V	Average of Two Social Science Courses
First Semester (1964 and 1965) Courses:				
Rating, First Semester, 1964	49.4	17.0	13.6	15.3
Rating, First Semester, 1965	67.7	37.1	27.4	32.3
Change in Rating	+18.3	+20.1	+13.8	+17.3
Second Semester (1964 and 1965) Courses:				
Rating, Second Semester, 1964	50.4	45.4	21.0	32.2
Rating, Second Semester, 1965	57.7	41.5	35.0	38.3
Change in Rating	+7.3	-3.9	+14.0	+6.1

to those for Natural Science. For the first semester courses, the ratings of Social Science IV increased slightly more, and the ratings of Social Science V somewhat less, than did those for Natural Science, and the average increase was about the same. For the second semester courses, Social Science IV actually decreased, while Social Science V increased considerably more than did Natural Science, and the average increase was again about the same. The decrease in rating for Social Science IV is due to the very high rating the course received for the second semester of 1964, but the small number of teachers involved in the rating increases the likelihood that this might be the consequence of some peculiarity in the sample. Of course, this would apply equally to the very low rating for this semester of Social Science V, which resulted in its relatively large increase in rating. Overall, the data suggest that the revised courses only kept pace with the unrevised courses, and the revisions did not improve their relative standings. Apparently, the increases in teacher satisfaction with these revised courses reflect only generally greater satisfaction with the televised curriculum as a whole.

One possible comparison does suggest that the revising of the Social Science courses improved their standing with the teachers. This involves comparing the shifts in ratings between the first semester of 1964 and the second semester of 1965. Although the content and telecasts for both Natural Science and Social Science differed between these semesters, the television teacher, director, and approach for the former remained the same, while for the latter these changed. This has the benefit of involving the largest numbers of teachers in the ratings for any comparison possible between the two years, because the sample for the first semester was the largest for 1964, as was the sample for the second semester for 1965. The data appear in Table 8:4. The ratings for the Social Science courses, whether looked at singly or as an average, increased much more than did those for Natural Science. Because the courses are not entirely comparable, we are hesitant to interpret these data as indicating that the revising of the courses increased teacher satisfaction with them. However, these data could be taken as evidence that such occurred.

What might be considered a satisfactory rating for a course? It is not possible to say, since there will always be some teachers who would find some telecasts of the most well-produced course less than "excellent," and there is no way to predict what the exact proportion might be. For any given survey, of course, the highest rating received by a course sets a standard which it is not unreasonable to expect the other courses to approach. Similarly, the highest rating for any course in the four surveys sets a feasible goal, within the range of sampling error, which a course at any time might be expected to reach. In the four surveys, the highest rating was for Natural Science III in the survey covering the project's third semester (the first semester of 1965). For this course, 72.2 per cent of the teachers said that all the telecasts were "excellent." Taking into account sampling error, a rating of 72.2 plus or minus seven, or between about 65 and 79 per cent, could be considered equivalent. A somewhat more conservative criterion can be derived by averaging the highest ratings for each semester, weighted by the number of teachers making each rating. This average high rating is 64.8, and plus or minus four, or between about

Table 8:4: Changes in Ratings of Unrevised (Natural Science) and Revised (Social Science) Courses, First Semester of 1964 and Second Semester of 1965

Rating: Per Cent of Teachers Saying That All of a Course's Televised Lessons Were "Excellent":

	Average of Three Natural Science Courses	Social Science IV	Social Science V	Average of Two Social Science Courses
Rating, First Semester, 1964	49.4	17.0	13.6	15.3
Rating, Second Semester, 1965	57.7	41.5	35.0	38.3
Change in Rating	+8.3	+24.5	+21.4	+23.0

61 and 69 could be considered equivalent.[9] These are the best estimates that can be provided as to the rating that courses might be expected to receive, if they were held in the highest degrees of esteem so far recorded. They give a rough idea of what might be considered a "satisfactory" rating.

It should be noted that, of the 50 course ratings for all four semesters, only three reached the criterion set by Natural Science IV in the project's third semester, and only seven reached the criterion based on the average of all four of the highest ratings. If a standard is set in the same way for each semester individually, based on the highest rating for each semester, then of the 10 courses for the first semester, four reached the criterion; of the 10 for the second semester, one; of the 15 for the third, one; and of the 15 for the fourth, four.

Overall, the goal should be high and uniform ratings. In this respect, the increase in average course ratings between 1964 and 1965, and the decrease in the range of the ratings for the final semester of 1965, can be taken as indications of progress on the part of the project.

In sum, the course ratings over the two years indicate that the degree of approval given the televised courses by the teachers varied markedly for any semester; that certain subjects were rated relatively higher or lower with some consistency; that approval for the televised curriculum as a whole increased and became more uniform as the project expanded to new areas snd procedures improved; that the revising of courses did not clearly improve the satisfaction of teachers with them; and that a goodly number of courses fell short of what might be considered as a high or "satisfactory" rating.

Part III: Teacher Dissatisfactions With the Televised Curriculum

During the project's first year, Volunteers working with teachers in schools reported receiving a variety of specific complaints about the various courses. Many of the complaints concerned the Social Science courses. Outside of this, there was no clear pattern. As a result, and because it had become clear that teacher approval of the courses varied, we decided to obtain systematically some information on these complaints. We wanted to find out with what kinds of things the teachers were concerned when they complained about a course, and what the relative frequency or pattern of these complaints was, both for the televised curriculum as a whole, and for the individual courses.

To do this, we developed what we called a "dissatisfaction inventory" for inclusion in the two surveys concerned with the courses during the project's second year. We constructed this "dissatisfaction inventory" by collecting, first, about 200 specific complaints made by teachers about the various courses from Volunteers, teachers, and school officials. Second, we grouped these by kind of complaint. Third, we wrote items applicable to any course covering each of the kinds of complaints. The result was the following check-list:

> Which of the following problems have you encountered with the telecasts for this course* during the semester? (Check as many as apply. If none apply, check none.)
>
> _____ The programs cover too much material for the children to comprehend.
>
> _____ The children are not able to see clearly objects, maps, and things which are shown.
>
> _____ The programs teach little the classroom teacher cannot teach.

_____ The television teacher does not have a good personality for television.

_____ The programs entertain, but teach very little.

_____ The children learn only from the pre-program "motivation" and the post-program "follow-up", and not from the program.

_____ The programs do not teach concepts, but only facts.

*the course was named in
bold letters at the top
of the page, and a separate
page was used for each course.

The construction of this inventory, based on the grouping of specific complaints by kind of complaint, gave a good indication of the various factors which the teachers considered in evaluating the courses. They covered a broad range. In the order of the items in the check-list, these included: a) the pace of the instruction; b) the adequacy of the visuals and demonstrations; c) whether the television was really giving instruction the classroom teacher was not easily able to give; d) the acceptability of the television teacher; e) whether entertainment, or "show biz", dominated the programs at the expense of instruction; f) whether the television left too much to the classroom teacher; and, g) whether the television presented only facts, but not general principles. The latter was included because several complaints were catalogued which were phrased almost identically to the item, but it deserves a special note. It is likely that the complainers meant that the telecasts did not present stock phrases which the children could memorize, a practice central to most Colombian teaching, and not at all what we would mean by the same words. One of the goals of the ETV Project is to promote more imaginative teaching, and independent thinking on the part of pupils, and to discourage rote memorization. However, the item was included because it seemed possible that there was some concern among the teachers over this issue, and if so, then this concern should be taken into account. Because of its ambiguous meaning, we have placed it in quotation marks in the various tables in which results for the "dissatisfaction inventory" are presented.

In the two surveys of 1965, this "dissatisfaction inventory" was included for each of the 15 courses televised in each of the two semesters. In analyzing the results, teachers who did not reply to the question on overall excellence of a course were omitted, to restrict the results for each course to those who actually taught with it.

Because the same inventory was used for each course, the results for the courses in any one semester can be compared. However, in this section, we will present only the results for the televised curriculum as a whole. In the next section, we will use these overall results as a basis for assessing the complaints about each course. In the following section, we examine the relationship between these complaints and the teacher ratings for the courses.

In order to get a picture of the relative frequency of these dissatisfactions for the curriculum as a whole, we summed the per cents making each kind of complaint for all 15 courses for each semester, and divided the total by the number of courses (15). This treats each per cent for each complaint as the best estimate for each course, and does not take into account the varying number of teachers evaluating the various courses. The results for both semesters of 1965 are shown in in Table 8:5. In the column at the right, these average per cents for each semester are again averaged, to give some idea of the relative frequency of these complaints over the entire year.

As can be seen, the two most frequent complaints were that the telecasts attempted to cover too much material, and that the children could not see the objects, maps or other things shown on television. On the average, about one out of five teachers teaching with any televised course made these complaints. Somewhat more than half as many complained that the children learned only from the "motivation" and "follow-up" provided by the classroom teacher, and that the programs entertained, but did not teach much. Slightly less than half as many complained that the programs did not teach "concepts", and that the programs taught little that the classroom teacher could not teach as well. Only a very few, on the average, complained about the television teacher as a personality. This was the pattern of teacher complaints about the televised curriculum as a whole.

Part IV: Teacher Dissatisfactions With Specific Courses

Of course, the pattern of teacher complaints about the televised curriculum as a whole is based on the complaints for each semester about each of the 15 courses. Each course has its own pattern, although for the courses in any subject (Natural Science, Social Science, etc.) there are many consistencies. Usually the pattern for a course is similar for both semesters, but occasionally it differs. The pattern varies not only between courses with high and low overall ratings, but also frequently differs for courses with very similar overall ratings. To find out what the pattern is for a particular course, it is necessary to look at the results for that course.

Table 8:5: Teacher Dissatisfactions with the Televised Curriculum as a Whole

Dissatisfaction:	Average of the Per Cents Making a Complaint for All 15 Courses Semester of the ETV Project: Third Semester (Feb.-June, 1965)	Fourth Semester (July-Nov., 1965)	Average of the Two Semesters
A) The programs cover too much material for the children to comprehend.	23.2	17.7	20.5
B) The children are not able to see clearly objects, maps, and things which are shown.	18.1	19.3	18.7
C) The children learn only from the pre-program "motivation" and the post-program "follow-up", and not from the program.	13.0	10.9	12.0
D) The programs entertain, but teach very little.	11.8	11.8	11.8
E) "The programs do not teach concepts, but only facts."	9.9	9.1	9.5
F) The programs teach little the classroom teacher cannot teach.	7.4	8.7	8.1
G) The television teacher does not have a good personality for television.	2.3	4.2	3.3

N = 15 courses for each semester. For the number of teachers on which "dissatisfaction inventory" results are based for each course, see N's for course ratings in Table 8:1.

The results for each course for both semesters appear in Appendix C. Taken as a whole, the quantity of data is large. Since teacher dissatisfaction on seven different counts was measured for each course for both semesters, there are a total of 210 measurements (7 dissatisfactions x 15 courses x 2 semesters = 210). It is neither feasible nor fruitful to examine each measurement individually. In this section, we will review only the highlights and trends.

We will often use the average for all courses for any complaint as a standard to assess the standing of the various courses. That is, we will focus on deviations, using the averages as a kind of "norm". This will place in relief those courses for which complaints differed markedly from those for the curriculum as a whole. This is intended to enrich what can be learned from the results. If a course received more than the average number of one kind of complaint, it probably merits attention on this count. However, it should be remembered that the seriousness of a complaint also is indicated by its absolute frequency. If a course received about the average number of one kind of complaint, but the average itself was high, it probably also merits attention on this count.

We have included in Appendix C the semester averages for each complaint, and have calculated the deviations from these of the complaints for each course. For these deviations, a plus sign (+) indicates that the per cent making the complaint about a course was greater than average, and the figure shows how much greater it was; a minus sign (-) indicates that the per cent was less than average, and the figure shows by how much.

We present these data in condensed, simplified form in *Table 8:6*. From this table, it is possible to learn quickly how a course fared for both semesters on each of the complaints. The average for all courses for each complaint is shown for each semester at the top. The courses are listed at the left. If the per cent making a complaint for a course was three or more percentage points *above* the average, there is a *plus* sign (+) beneath the average opposite the course's name. If the per cent making a complaint for a course was three or more percentage points *below* the average, there is a *minus* sign (-). If there is no sign, the per cent making the complaint for the course was within three percentage points, either way, of the average. Thus, plus signs mean that the per cent making a complaint about a course was *greater* than the average, minus signs mean that it was less than the average. The use of three percentage points, plus or minus, is arbitrary. However, this table gives a useful rough picture of the teachers' complaints for each course during 1965.

Looking at the courses by subject matter (all Natural Science courses, for example), some interesting patterns can be seen. These are summarized in *Table 8:7*. For Natural Science, of 19 deviations of three or more percentage points above or below the averages, only one was above. For Social Science, of 11 deviations, seven were above. For Mathematics, of 25 deviations, 18 were above. For Lenguaje, of 23 deviations, 11 were above. For Music, of three, two were above. Of course, the number of courses in any subject determines the number of deviations which might appear. Since there were seven kinds of complaints which the teachers might make for each of the semesters, the

Table 8:6: Teacher Dissatisfaction With Each Course Above (+) or Below (-) the Average for All Courses, for Both Semesters of 1965

+ = 3 or more percentage points above the average for the complaint
- = 3 or more percentage points below the average for the complaint

	Dissatisfactions:*													
	First Semester, 1965							Second Semester, 1965						
	A	B	C	D	E	F	G	A	B	C	D	E	F	G
Semester Average:	23.2	18.1	13.0	11.8	9.9	7.4	2.3	17.7	19.3	10.9	11.8	9.1	8.7	4.2
Courses:**														
NS II	-		-			-		-						
NS III			-	-							-			
NS IV	+		-	-							-	-		
NS V		-	-	-	-				-	-	-			
SS IV	+	+		-				+			-			
SS V	+	-			-		+	+				+		
L I	-	+	+	+	+			-			+			
L II	-	-	-	+		-		-	-	+	+			
L III	-	-		+	+			-	-		+			
M I		+	+	+		+			+	+	+			
M II										+	+	+	+	
M III	-	+			+	+		+						
M IV						+		+			-			
M V		-	-	-	-			+			-			
Mus. I		-	+								+			

Dissatisfactions:
A) The programs cover too much material for the children to comprehend.
B) The children are not able to see clearly objects, maps, and things which are shown.
C) The children learn only from the pre-program "motivation" and the post-program "follow-up," and not from the program.
D) The programs entertain, but teach very little.
E) "The programs do not teach concepts, but only facts."
F) The programs teach little the classroom teacher cannot teach.
G) The television teacher does not have a good personality for television.

Courses: NS = Natural Science; SS = Social Science; L = Lenguaje; M = Mathematics; Mus. = Music. Roman numeral = grade.

*Dissatisfactions listed in order of combined average for both semesters, as in Table 8:5.

**For the number of teachers on which "dissatisfaction inventory" results are based for each course, see N's for course ratings in Table 8:1.

Table 8:7: Teacher Dissatisfactions Above and Below the Average by Subject Matter During 1965

Deviations Three or More Percentage Points Above or Below the Averages for All Courses for Either of the Two Semesters of 1965:*

Subject:	(N)**	Total Possible	Number Occurring	Number Above (+)	Number Below (-)	Per Cent of Total Possible Above (+)
Natural Science	(4)	56	19	1	18	1.8
Social Science	(2)	28	11	7	4	25.0
Lenguaje	(3)	42	23	11	12	26.4
Mathematics	(5)	70	25	18	7	25.7
Music	(1)	14	3	2	1	14.3

*Data summarized from Table 8:6.
**N = Number of courses in each subject.

four Natural Science courses conceivably could have a total of 56 deviations for both semesters; the two Social Science courses, 28; the three Lenguaje courses, 42; the five Mathematics courses, 70; and the one Music course, 14. Taking the possible deviations for each subject as the base, the number falling above the averages for Natural Science was less than two per cent; for Social Science, 25 per cent; for Lenguaje, about 26 per cent; for Mathematics, about 26 per cent; and for Music, about 14 per cent. Thus, among the five subjects, Social Science, Lenguaje, and Mathematics were complained about most often with greater than average frequency by the teachers. Natural Science's deviations were almost all below the averages (18 out of 19), and Music had relatively few above.

For most of the kinds of complaints, failure to complain can be taken as a sign of satisfaction. However, the complaint that the "programs cover too much material" is a little different. It would be possible to interpret below average frequencies of complaints on this count as an indication that the teachers felt the course did not cover enough material. With this in mind, we would like to look at the pattern of results for Lenguaje and Natural Science II. All three Lenguaje courses received less than the average frequency of complaints of this kind for both semesters, as did Natural Science II. If this meant that the teachers believed these courses did not cover enough material, we would expect them also to complain with greater than average frequency that they "entertain, but teach very little". This proves to be the case for all the Lenguaje courses; for each of the six minus signs for "cover too much" there is also a plus sign for "entertain." This strongly suggests that the teachers did think that Lenguaje did not teach enough, and that the below average complaints on "cover too much" in this instance are not a sign of satisfaction. For Natural Science II, the below average complaints for "cover too much" are not accompanied by above average complaints for "entertain". This suggests that the teachers were satisfied with quantity of material covered in this course.

Further examination of the patterns for various subjects and individual courses in Table 8:6 is also suggestive. For example, the Mathematics courses vary considerably among themselves. For certain complaints, Mathematics for some grades received more than the average, the courses for other grades less. Of these, Mathematics I seemed to meet with the greatest objections, and the pattern for both semesters was almost identical. The teachers complained with greater than average frequency that the children could not "clearly see objects," that the children only learned from the classroom teacher's "motivation" and "follow-up", and that the course only "entertained." Mathematics V, on the other hand, was only once complained about with greater than average frequency, and this was in the second semester, for "covering too much material." Mathematics IV was only twice complained about with more than average frequency, and for the most part closely followed the average. Mathematics II and III received above average complaints relatively frequently, with Mathematics II faring worst in the second semester, Mathematics III in the first semester. Roughly, then, teacher satisfaction with Mathematics seemed to increase with the grade; the higher the grade, the less often were complaints above average. This probably reflects the teachers' own consternation over the "new math" concepts used in the courses, which they apparently felt did not come across to the younger children. This is probably why they tend to complain above average that the first and second grade Mathematics courses "entertain, but teach very little." The telecasts held the pupils' interest, but the teachers did not think they absorbed much. This interpretation is supported by another aspect of the pattern for these courses: In the three instances during the two semesters that the teachers complain above average that Mathematics I and II "entertain, but teach very little," they also complain above average that the children "learn only from 'motivation' and 'follow-up.'" The teachers apparently felt the telecasts did not teach, so the full burden of instruction fell to them.

Lenguaje already has been discussed in one respect. It should also be pointed out that Lenguaje II and III were complained about less than average for both semesters in regard to the children not being able to "see objects, maps, and things." Apparently, the teachers, although dissatisfied with the courses' tendency only "to entertain," were relatively satisfied with the visual aspects of the telecasts.

Social Science was consistently complained about more than average in regard to "covering too much material." The actual per cents were generally extraordinarily high, as can be seen either in the Appendix or in the next table (Table 8:8). This probably reflects the teachers' conception of learning when historical and political material is involved. Rote memorization is the typical mode of instruction in Colombia, and its achievement, understandably, would seem most important for names, dates, and events. When a telecast ranges over a large

Table 8:8: Courses Exceeding the Average for Each Dissatisfaction by Three or More Percentage Points, for Both Semesters of 1965

First Semester, 1965 (Third Semester of the ETV Project)

Dissatisfaction:*	Semester Average	Courses Exceeding Average by Three or More Percentage Points	Per Cent Making Complaint About Course**
A) The programs cover too much material for the children to comprehend.	23.2	Social Science V	58.5
		Social Science IV	45.7
		Natural Science IV	30.8
B) The children are not able to see clearly objects, maps, and things which are shown.	18.1	Mathematics I	28.8
		Lenguaje I	26.9
		Social Science IV	22.9
		Mathematics III	21.3
C) The children learn only from the pre-program "motivation" and the post-program "follow-up", and not from the program.	13.0	Mathematics I	27.6
		Lenguaje I	18.6
		Music I	17.2
D) The programs entertain, but teach very little.	11.8	Lenguaje I	24.6
		Lenguaje III	23.4
		Mathematics I	15.9
		Lenguaje II	15.1
E) "The programs do not teach concepts, but only facts."	9.9	Lenguaje III	20.1
		Mathematics III	15.9
		Lenguaje I	15.0
F) The programs teach little the classroom teacher cannot teach.	7.4	Mathematics III	12.2
		Mathematics I	11.2
		Mathematics IV	10.9
G) The television teacher does not have a good personality for television.	2.3	Social Science V	6.6

*Dissatisfactions listed in order of combined average for both semesters, as in Table 8:5.

**For the number of teachers on which "dissatisfaction inventory" results are based for each course, see N's for course ratings in Table 8:1.

Table 8:8: (cont.) Courses Exceeding the Average for Each Dissatisfaction by Three or More Percentage Points for Both Semesters of 1965

Second Semester, 1965 (Fourth Semester of the ETV Project)

Dissatisfaction:*	Semester Average	Courses Exceeding Average by Three or More Percentage Points	Per Cent Making Complaint About Course**
A) The programs cover too much material for the children to comprehend.	17.7	Social Science V	31.9
		Mathematics IV	23.6
		Mathematics V	22.2
		Mathematics III	21.5
		Social Science IV	21.4
B) The children are not able to see clearly objects, maps, and things which are shown.	19.3	Mathematics I	29.6
C) The children learn only from the pre-program "motivation" and the post-program "follow-up", and not from the program.	10.9	Mathematics II	18.7
		Mathematics I	15.2
		Lenguaje II	14.4
D) The programs entertain, but teach very little.	11.8	Lenguaje I	19.9
		Lenguaje II	18.5
		Lenguaje III	17.5
		Mathematics II	17.4
		Music I	17.2
		Mathematics I	15.9
E) "The programs do not teach concepts, but only facts."	9.1	Mathematics II	13.7
		Social Science V	12.5
F) The programs teach little the classroom teacher cannot teach.	8.7	Mathematics II	11.8
G) The television teacher does not have a good personality for television.	4.2	- - -	- -

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*Dissatisfactions listed in order of combined average for both semesters, as in Table 8:5.

**For the number of teachers on which "dissatisfaction inventory" results are based for each course, see N's for course ratings in Table 8:1.

quantity of such material, the teachers become frustrated, for the quantity and pace makes it impossible for all the "facts" to be memorized, and without memorization they doubt that any learning has taken place.

Natural Science, as might be expected of a subject whose courses received the highest overall ratings, generally had less than average or average numbers of complaints. Music, also high in overall rating, also generally had average numbers of complaints. Its above average complaints concerned the children learning only from "motivation" and "follow-up" (in the first semester), and that it "entertained, but taught very little" (in the second semester). This suggests some concern among the teachers over how much the children get out of the telecasts, and probably indicates some confusion over the goals of the Music course, which are musical participation and appreciation on the part of the pupils.

Of course, one of the purposes of measuring the specific dissatisfactions with each course is to identify those courses with which the teachers were particularly dissatisfied in some respect. We have given a rough picture by looking at the complaint patterns for each course and subject. We will now look briefly at more precise data on the courses which received more than average complaints. In Table 8:8, we take each kind of complaint and for each of the semesters present the courses receiving more than an average number. Again, the criterion for being above average is three or more percentage points. Thus, every plus sign in Table 8:6 is represented by an entry in Table 8:8 showing the actual per cent of teachers making the complaint. From this new table, it is possible to see how far above average a particular complaint was for any course.

The data in Table 8:8 speak for themselves. However, attention should be called to certain of the results. For "covering too much material," Social Science IV and V in the first semester and Social Science V in the second semester stand out dramatically. For this complaint, the average of the per cents for the first semester was 23.2. For Social Science IV, 45.7 per cent, and for Social Science V, 58.5 per cent, made the complaint. The second semester average was 17.7. For Social Science V, 31.9 per cent made the complaint. For both semesters, Social Science V received the highest per cent of complaints on this count, and these were the highest for complaints of any kind for any course during each semester.

For the children not being able to "see clearly objects, maps, and things," Mathematics I stands out for both semesters. The first semester average was 18.1. For this course, 28.8 per cent made the complaint. The second semester average was 19.3. For this course, 29.6 per cent made the complaint. Lenguaje I also stands out for the first semester, with 26.9 per cent making the complaint. This is in contrast to Lenguaje II and III, which received fewer than average complaints of this kind (see Table 8:6).

For "the children learn only from 'motivation' and 'follow-up,' Mathematics I again stands out for both semesters. The first semester average was 13.0. For this course, 27.6 per cent made the complaint. The second semester average was 10.9. For this course, 15.2 made the complaint. Mathematics II also stands out for the second semester, with 18.7 per cent making the complaint.

For "the programs entertain, but teach very little," all three Lenguaje courses stood out for both semesters. The first semester average was 11.8. For Lenguaje I, 24.6 per cent made the complaint, and for Lenguaje III, 23.4 per cent, and Lenguaje II, 15.1 per cent. Only Mathematics I was also above the average, with 15.9 per cent. The second semester average also was 11.8. The per cents making the complaint for Lenguaje I, II, and III were, respectively, 19.9, 18.5, and 17.5. Also falling above the average on this count for the second semester were Mathematics II, with 17.4 per cent, Music I, with 17.2 per cent, and Mathematics I, with 15.9 per cent. The most striking result, however, is the predominance of the Lenguaje courses.

Because the interpretation of the complaint that "the programs do not teach concepts, but only facts" is uncertain, we will not give it any attention here. The absolute per cents making other kinds of complaints were less than for those so far discussed, and the results can be seen in the table.

Part V: Relationships Between the Specific Complaints and the Overall Ratings

We will now examine the relationships between the teachers' expression of specific dissatisfactions or complaints with the courses and their overall course ratings. By necessity, some of the procedures we will use are somewhat involved and may be understood fully only by other researchers, but the findings themselves should be clear to everyone. We will focus on three issues -- whether the specific complaints actually had much to do with the overall ratings, as must be the case if we are to take them seriously; which of the complaints seemed to have the most to do with the overall ratings; and, what the importance of each complaint was for the overall ratings of courses covering different kinds of subject matter.

In looking at these issues, we will present two distinct kinds of analyses. In the first, we will rank the 15 courses for each semester of 1965 (the year during which a "dissatisfaction inventory" or complaint battery was included in our surveys) by the frequency of complaints made about each, and then we will compare the resulting rankings of courses with those obtained from the overall ratings. We will do this for each complaint separately, and for the average of all the complaints. The degree of similarity between the rankings (by complaint and overall rating) will give some indication of whether the complaints had much to do with the overall ratings, which had the most to do with them, and whether, in fact, the complaints could be substituted for them. Our basic tool for this analysis will be the rank order correlation coefficient (rho). In the second, we will relate the making of the complaints, considering them together as a set, to the overall ratings of the courses covering different kinds of subject matter, and as part of this analysis we will show the importance for overall ratings of each of the complaints for each of the kinds of subject matter. Our basic tool for this analysis will be multiple correlation.

These analyses further confirm much of what already has been reported. However, they also provide much greater understanding of the teachers' reactions to the courses, and bring out not only some new information, but also result in some careful qualifications of what might previously have seemed obvious.

The Rank Order Analysis: For each complaint, we ranked the 15 courses for each of the two semesters of 1965 on the basis of the per cent making the complaint, and compared each set of rankings with those obtained from the overall ratings. As before, the measure of overall rating was the per cent saying all of a course's telecasts were "excellent." Our measure of the degree of similarity between each complaint ranking and the ranking based on overall course ratings is the rank order correlation coefficient (rho). For convenience, we always ordered the courses from "good" to "bad" in all rankings so that the measure of relationship, when one exists, would be positive. A coefficient (rho) of 1.00 would mean identical rankings; the closer the coefficient comes to this figure, the greater the degree of similarity between the two rankings involved.

The results of this analysis are shown in Table 8:9. At the top of the table are additional rank order correlation coefficients for both semesters. These two rhos are based on comparing the ranking by the average for all complaints with ranking by the overall ratings. As can be seen, the coefficient for the first semester is .732, and for the second semester, .779, both highly significant statistically (p.<.005 and p.<.001, respectively). Taken as a whole, then, the complaints did indeed seem to have something to do with the overall ratings. This gives support to the contention, implicit in the attention we give them, that they validly measure things which really do displease the teachers about the courses.

Table 8:9: Rank Order (rho) Correlation Coefficients Between Rankings of Courses by Overall Ratings and by Frequency of Dissatisfactions, for Both Semesters of 1965

	First Semester, 1965		Second Semester, 1965	
Ranking of Courses by Overall Rating Correlated With Ranking by:	Rank Order (rho) Coefficient	p.*	Rank Order (rho) Coefficient	p.*
Average of All Complaints	.732	<.005	.779	<.001
A) The programs cover too much material for the children to comprehend.	.285	<.20	.354	=.10
B) The children are not able to see clearly objects, maps, and things which are shown.	.396	<.10	.502	<.05
C) The children learn only from the pre-program "motivation" and the post-program "follow-up", and not from the program.	.575	<.03	.554	<.03
D) The programs entertain, but teach very little.	.450	<.05	.389	<.10
E) "The programs do not teach concepts, but only facts."	.115	<.40	.178	<.30
F) The programs teach little the classroom teacher cannot teach.	.629	<.01	.435	<.10
G) The television teacher does not have a good personality for television.	.420	<.10	.477	<.05

*one-tailed.

N = 15 courses for each semester. For the number of teachers on which "dissatisfaction inventory" results are based for each course, see N's for course ratings in Table 8:1.

However, none of the individual complaints led to equally high coefficients, although several are statistically significant. Because the patterns differed among the individual complaints, we will discuss these patterns individually.

The result that was most consistent for both semesters was obtained from the complaint that the "children learn only from 'motivation' and 'follow-up.'" For the first semester, the coefficient was .575; for the second semester, .554; both were significant (p.<.03). For four other complaints, the results were significant (using .05 as the criterion) for one of the semesters, but only bordered on significance for the others (in all the cases, p.<.10). These were the complaints that the "children are not able to see clearly objects, maps, and things"; that the "programs entertain, but teach very little"; that the "programs teach little the classroom teacher cannot teach"; and that the "television teacher does not have a good personality." For the complaint that the "programs cover too much material," the most frequent complaint for the televised curriculum as a whole, the coefficients were surprisingly low: for the first semester, .285 (p.<.20), and for the second, .354 (p.<.10). For the ambiguous complaint that the "programs do not teach concepts, only facts," the coefficients were extremely low, and far, far from being significantly greater than a zero correlation.

We interpret these data as indicating that the complaints were related to the overall ratings. We base this on the relatively high correlation between the rankings by the average for all complaints and the overall ratings, and on the trend of the correlations resulting from the rankings by individual complaints, which were either significant or bordered on significance for both semesters for five of the seven kinds of complaints. This is important validation of the pertinence of these complaints. The data also suggest that the five of the seven kinds of complaints which led to either significant or near-significant correlations for both semesters were those most directly and consistently involved in the teachers' overall ratings.

The extremely low and non-significant coefficients for the complaint that the "programs do not teach concepts" indicates that it has little to do with the overall ratings, and can be ignored. It had only a moderate overall frequency (9.5 per cent for the combined average for both semesters, as shown in Table 8:5), and the per cent complaining on this count did not vary as much for the different courses as for other complaints with similar overall frequencies (see Table 8:6 or Appendix C).[10] This is welcome evidence that this ambiguous complaint had little role in overall ratings. There will be more evidence supporting this interpretation later.

The failure of the complaint most frequently made -- that the "programs cover too much material" -- to lead to high and significant coefficients suggests that while this complaint may have been important for the overall rating of some courses, it was not equally important for all.[11] Perhaps it was primarily important for the courses in Social Science, where the frequency of complaints on this count were generally extraordinarily high? This raises the question of which complaints were most important for which course ratings. Were the roles of the complaints the same for all? Or did they differ? We turn to this issue in the following section.

The Multiple Correlation Analysis: Before we present our findings, we will briefly discuss the methodology we used. Although correlation coefficients again are involved, they are of a quite different kind than those used in the preceding section.

In brief, we took each teacher's set of complaints, and related them to his overall course rating. As a result, we obtained two useful measures -- one indicating the degree of relationship between the making of the complaints and the overall ratings, and the other indicating the importance of each of the complaints in this overall rating. Because we wanted to look at the role of the complaints for the different kinds of content televised, we did this separately for each of the subjects for which several courses were included in the televised curriculum. Since only one course was televised in Music, we did not include it. Thus, we examined only the four "core" subjects -- Natural Science, Social Science, Lenguaje, and Mathematics. This covered 14 of the 15 courses, and the major parts of the televised curriculum. The grouping of courses by subject matter has the important advantage of making the results easier to grasp by reducing their quantity. It is justified by the rough similarity of ratings and complaint patterns for courses in the same subject. Moreover, it gives the results broader meaning because they are based on sets of courses, and therefore occur despite peculiarities of the individual courses.

In this analysis, the overall rating used is somewhat different than that used elsewhere in this report. The item for overall rating actually had six alternatives, each representing a reduced degree of favorability toward the course. Elsewhere in this report, the index of a course's standing is taken as the per cent of teachers saying that all of the telecasts for a course were "excellent," which is the most favorable of the six possible replies. The other alternatives involved lesser numbers of telecasts ("not all, but almost all," etc.). For this analysis, we used the teacher's rating just as he gave it, coded into scores ranging (for each of the alternatives) from one to six. Each of the complaints, on the other hand, either was or was not made; thus, for each teacher, each complaint had either a score of one ("complaint made") or zero ("complaint not made"). It is these latter scores, for the complaints, which we will correlate with the scores for the overall ratings.

In one sense, correlation is the prediction of one variable by another. The degree of relationship between them is measured by the degree of success of prediction. In this instance, we will take the sets of complaints as a team of predictors, and with them attempt to predict the overall rating. The measure of the success of the prediction, and thus the measure of the relationship between the set of complaints and the overall rating, will be the multiple correlation coefficient. The square of such a coefficient can be interpreted as the quantity or amount of variation in the predicted variable (the overall rating) "caused," "explained," or "accounted for" by the set of predictors (the complaints).

The results are shown in Table 8:10. As can be seen, the coefficients ranged from .331 to .591, and all were highly significant ($p.<.001$). This gives further support to the previous interpretation of the rank order coefficients that the complaints are related to the overall ratings. They do seem to be of valid concern.

Table 8:10: Importance of Various Kinds of Complaints for Overall Course Ratings, for Both Semesters of 1965

Standardized Weights* for Each Kind of Complaint in Predicting Overall Course Rating**:

Subject:	(N)***	Semester	Dissatisfactions:****							(N)*****	Multiple Correlation Coefficient	p.
			A	B	C	D	E	F	G			
Natural Science	(4)	1st	001	002	005	065	000	010	001	565	.311	<.001
		2nd	026	027	011	073	002	008	001	1004	.421	<.001
Social Science	(2)	1st	058	001	060	010	000	007	005	246	.440	<.001
		2nd	038	011	010	123	000	009	022	556	.550	<.001
Lenguaje	(3)	1st	000	021	010	190	005	000	005	473	.504	<.001
		2nd	002	013	018	222	000	026	011	1054	.591	<.001
Mathematics	(5)	1st	013	001	024	050	000	013	000	734	.370	<.001
		2nd	017	025	013	085	000	009	003	1679	.440	<.001

Dissatisfactions:

A) The programs cover too much material for the children to comprehend.
B) The children are not able to see clearly objects, maps, and things which are shown.
C) The children learn only from the pre-program "motivation" and the post-program "follow-up," and not from the program.
D) The programs entertain, but teach very little.
E) "The programs do not teach concepts, but only facts."
F) The programs teach little the classroom teacher cannot teach.
G) The television teacher does not have a good personality for television.

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*Standardized regression coefficient squared (beta weight^2). These indicate how great a unit change in the criterion (overall rating) would occur with a unit change in the independent variable (each complaint), with other independent variables (other complaints) not changing. For simplicity, the decimal point that would normally precede each figure has been dropped.

**For this analysis, the overall rating ranged from 1 to 6 for each teacher, which were the number of alternatives of varying favorability offered for the item on overall course evaluation. The multiple correlation coefficients are positive, because the higher the teacher's score, the less favorable was her evaluation of the course.

***(N) = Number of courses in subject televised during each of the two semesters of 1965.

****Dissatisfactions (complaints) listed in order average for all courses for both semesters combined, as in Table 8:5.

*****(N) = Number of teachers on whose responses multiple correlation and weights are based.

The reader familiar with statistics will want to note that the coefficients are lower than they presumably would be had the complaints been measured on a finer basis than "either/or." Because the complaints were measured dichotomously, the appropriate measure of the correlation between each and the overall rating for use in calculating the multiple correlation coefficient is the point biserial coefficient. For purely statistical reasons, point biserial correlation leads to a lower coefficient for the same data than the normally computed product moment coefficient used when both predictor and predicted variables are measured in a graduated or continuous fashion -- that is, if one of two graduated variables were dichotomized, the resulting point biserial coefficient would be lower than the normally computed product moment coefficient with both variables in graduated form. Since we started with one set of variables scored on an "either/or" (dichotomous) basis, we had no choice but to use the point biserial coefficient. However, it is reasonable to suppose that had the degree of dissatisfaction on each count been measured more finely (that is, in a graduated fashion), the resulting coefficients and the multiple correlation coefficient calculated from them would have been higher. As it is, they are what is usually termed as "depressed." Put another way, they give an underestimate of what is reasonable to suppose is the "true" degree of relationship, simply because of the way in which the set of predictors (the complaints) were measured. In addition, it is also quite possible that some of the teachers not willing to give the top rating to a course did not distinguish clearly among the various middle alternatives, with the result that their ratings, which we are trying to predict, may not have accurately reflected their exact evaluations of the courses. Such "false" scores, by misrepresenting the evaluation, also would artificially "depress" the coefficients.

It can also be seen in Table 8:10 that the multiple correlation coefficients were consistently higher for the second semester. It will be recalled that we constructed the "dissatisfaction inventory" through the collection and grouping of a large number of actual complaints. We made a considerable effort to include an item for every aspect of the televised courses which the teachers were able to single out. That is, we tried to take account of every discriminable or differentiated characteristic. If the inventory is taken as representing all or almost all of these aspects, then it may be said to cover the rational or practical criteria which teachers reasonably can apply to the courses. If so, then other factors playing a role in overall ratings must largely consist of the undefined emotional reactions of "like" or "dislike" which everyone has toward productions -- on screen, stage, or television -- of any kind. In these circumstances, the higher coefficients for the second semester can be interpreted as hinting at an increase in the use of such rational, practical criteria in judging the courses. This would mean an increase in concern among the teachers over the instructional effectiveness of the courses. That is, an increase in their evaluating them as they should evaluate them. This would certainly be salutary. However, we offer this interpretation with some caution, since the differences in the coefficients, although consistent, are not great.

Now, we will look, for each of the subjects, at the importance of each of the complaints for the overall ratings. Again, we will briefly discuss our methodology.

As a by-product of the computation of a multiple correlation coefficient, standardized weights (technically known as "beta weights") may be obtained for each of the predictors. These, when squared, show the relative importance of each of the predictors in "explaining" or "causing" variation in the predicted variable. In this case, the predictors are the complaints, and the squares of the weights show the relative importance of making each complaint for the making of the overall rating.

These squared weights also are shown in Table 8:10. Comparisons should first be made for those for any one subject for one of the semesters. These give the relative importance for the overall rating for that semester of making any one of the complaints. For each semester for each subject, the top figure, which is usually at least double its nearest competitor, is underlined. As an example, we will take Natural Science for the first semester. The top figure, for the complaint that the programs only "entertain," is 065. Its nearest competitor, for the complaint that the programs "teach little the classroom teacher cannot teach," is 010. Thus, the former complaint was about six and one-half times as important as the latter for the overall rating. Once the relative standing of each complaint is determined for each subject for each semester, these findings can be compared for the various subjects or semesters.

Before discussing the results, we would like to emphasize just what these squared weights show. They do not indicate which complaint was most frequent for a course. That has already been shown, and a glance at Table 8:10 and the various tables on the frequencies of complaints (see Table 8:5, 8:6 or Appendix C) will make it clear that importance for the overall rating and frequency are not necessarily related. They should not be taken as a substitute for information on actual frequency. Instead, they supplement and enrich the meaning of such information. What they do show is how much the making of a complaint is independently related to the making of the overall rating -- the amount of independent prediction possible by the complaint after the other complaints have predicted all they can. It is this that we mean when we speak of "importance." If a complaint was frequent, but not apparently important for overall rating, it simply means that teachers making and not making the complaint were equally likely to give high or low ratings to the courses. In addition, the grouping of courses by subjects, although it has the several advantages pointed out earlier, cloaks the differences among these courses. Thus, it might be said that for each subject the squared weights show the particular complaint or complaints about which at least some of the teachers were extremely sensitive. They throw into relief "sore points" that might otherwise be overlooked.

We will discuss the results for each subject first. Then, we will look at the overall trends.

For Natural Science, as can be seen in the table, the most important complaint for overall rating for both semesters was that the programs "entertain, but teach very little." This is extremely interesting, for it will be recalled that courses for this subject had very high overall ratings, and relatively few complaints were made about them. This means that if a teacher made this complaint, he was more likely to give the course a lower rating than if he did not make it regardless of whether he made other complaints or not. This was less so for the other complaints. It will also be recalled that only about one out of 10 teachers, on the average, made this complaint for any course, and that for the majority of the Natural Science courses less than this average made this complaint (see Table 8:6). But for this minority, the entertainment criticism was apparently a very sensitive one.

For Social Science, two complaints are almost equally important for the overall rating in the first semester (both are underlined in the table). They are the complaints that the children "learn only from 'motivation' and 'follow-up,'" and that the programs "cover too much material." In the second semester, the complaint that the programs only "entertain" is by far the most important for the overall rating, although the complaint that they "cover too much material" is a quite weak second. Again, this is interesting, for while it indicates that the very frequently made complaint for these courses about covering "too much" was indeed quite important for the overall rating, it also indicates that for a smaller number of teachers other complaints were extremely important. Since "cover too much" was important, its reduced importance in the second semester probably reflects the lower number of complaints made on this count in the second semester for these courses (see Table 8:8). Probably, too, the considerable relative importance attached to the complaints that the children "learn only from 'motivation' and follow-up'" and that the programs only "entertain" partly reflects this more frequent complaint, since both imply that the telecasts do not do a good job of teaching. However, the great predominance of the complaint that the programs only "entertain" in the second semester suggests that for a minority of the complainers this was, by itself, a very sensitive point.

For Lenguaje, the most important complaint for the overall rating for both semesters was that the programs only "entertain," and this was so by an overwhelming margin. It will be recalled that this was also generally a frequent complaint for these courses. Apparently, it was not only frequent, but also figured greatly in the overall ratings. Here, as with the Social Science courses, the most frequent complaint also was the one about which the teachers were most sensitive.

For Mathematics, the most important complaint for the overall rating for both semesters was that the programs only "entertain." For the first semester, the second most important complaint was that the children "learn only from 'motivation' and 'follow-up,'" and for the second semester, that the children "are not able to see clearly objects shown." It will be recalled that for the courses in this subject for the lower grades, these were also fairly frequent. For this subject, they seem to combine into a general feeling that while the children may view with interest, they learn little. Taken as a whole, this seems to be the "sore point" for this subject among the teachers. Again, however, it is interesting that for some teachers the complaint that the programs only "entertain" should be so important.

Taking the courses in each of these four "core" subjects as a whole, then, these results indicate which complaint or complaints were most important for the overall ratings. For those singled out as "important," in this context this means two things. First, that if a teacher made the complaint, he was more likely to give the course a lower rating than if he did not make the complaint. Second, that this was markedly more the case for the "important" complaint or complaints than for the others. The relative importance of each of the complaints can be determined from the table for the courses for each of the subjects for each semester. Because the results directly reflect the tie-in between the complaints and overall ratings, they provide information not otherwise available. They give us a fuller understanding of the teachers' reactions to the televised courses, and guard against our overlooking points on which some teachers were particularly sensitive because complaints about them were not as frequent as some of the others.

So far, we have looked at the importance of the complaints for the overall ratings for each of the subjects. This has permitted us to relate these new findings to those presented earlier on the specific dissatisfactions the teachers had with each of the courses. Now, we will look at the overall trend of these new results.

The outstanding trend concerns the complaint that the programs "entertain, but teach very little." For the four subjects, this was the most important complaint for the overall ratings for both semesters for three of them, and for the other subject (Social Science) it was the most important for one of the semesters. Thus, in seven of the eight analyses in Table 8:10, this complaint was the most important.

It is the most important for subjects for which it was a frequent complaint (such as Lenguaje), and also most important for subjects for which it was a relatively infrequent complaint (such as Natural Science). It was the most important for the subject with the highest overall ratings (Natural Science), as well as for the other subjects, including, for one semester, the subject with the lowest overall ratings (Social Science). This ubiquity can hardly be ignored. It demands some interpretation, however tentative or cautious or qualified it may have to be. What might this trend mean?

The task of interpreting this trend is complicated by the fact that the various subjects certainly differed among themselves not only in content but in presentation. To attribute the importance of this complaint to factors unique in each instance to each subject would risk overlooking the meaning of its pervasiveness. On the other hand, to ignore such unique factors would not only reduce the value of the results by submerging what they can tell us about each subject, but also might give too much emphasis to this trend. Thus, we will try to weigh the contribution of unique factors for each subject in looking at this trend, using the totality of data and our knowledge of each subject.

In some instances, the importance for the overall rating of this complaint seems to reflect the teachers' opinion that while the pupils may watch the telecasts raptly, they do not learn much from them. Thus, the teachers say, the programs only "entertain." This seems most plausible for those courses or subjects about which the teachers also make some complaint with relatively great frequency about the burden of instruction falling too heavily on the classroom teacher -- such as that the children "learn only from 'motivation' and 'follow-up.'" This would fit the Mathematics courses, especially those for the lower grades. This also seems plausible for those courses or subjects about which the teachers complain with relatively great frequency that they "cover too much material," which also implies that insufficient learning, relative to the amount of material presented, takes place. This would fit the Social Science courses. It also seems plausible when the complaint about only "entertaining" is itself extremely frequent. This would fit the Lenguaje courses.

Yet, the importance of this complaint for the overall rating for Natural Science, which fits none of these patterns, suggests that there also is some common or general factor involved. We are inclined to think that factors unique to the courses or subjects only partly explain the importance of this complaint for their overall rating. Another explanation is that some teachers are extremely dubious about the value of instruction when they find that the children enjoy it. They tend to think of pleasurable absorption and learning as inconsistent. There is little in their own experience or pre-television teaching practices that would give them a different outlook. The typical instructional method in Colombia is rote memorization, or teacher-led drill, and there is little in it to inspire pleasure or enthusiasm on the part of the pupil. It is the way the teachers were taught when young, and it is the way they usually teach themselves. There is also relatively little emphasis in Colombian schools on the individual student, or on independent work. Crowded conditions and a lack of teaching materials -- books, visual aids, and equipment -- make it difficult. The emphasis tends to be on discipline and order. The teacher takes as his goal control over a docile, orderly class mechanically committing to memory whatever should be learned, and giving evidence of its learning by feeding back as a group memorized phrases at the teacher's cues. Under these circumstances, it would not be surprising if the teachers were confused over the role of "entertainment" in education, and were particularly wary of it. If so, then the importance of this complaint for the overall ratings reflects a very real culture-based barrier to teacher satisfaction with televised or any instruction emphasizing a modern approach to education.

We offer this as a speculation. However, the results point toward it, and it is too important to risk ignoring it. We would look upon the results as a warning. The data on the teachers' concern over "entertainment" suggest that it is an extremely sensitive point with them. As such, it demands special attention in the planning and presentation of courses, and in the explanation of them to the teachers. This does not mean that good instruction over television need be any less pleasurable or interesting to the pupil. It does mean that is is particularly important to avoid "entertainment" taking precedence over instruction, for teacher dissatisfaction is an almost certain consequence. Less obvious, it also means that for the teacher clear-cut emphasis must always be placed, for all courses, on their instructional goals. As evidence of how critical this is, we would again point to Natural Science, for even for this subject, whose courses received very high overall ratings, if a teacher thought the telecasts only "entertained," he was inclined to give the course a lower rating. Such explaining to the teacher is a job for the utilization Volunteer and for the Teacher Guides, which outline the content and goals of the telecasts. This would provide a defense against this culture-based reaction, which can only be detrimental to the success of the televised curriculum by leading to teacher dissatisfaction with the televised courses.

Part VI: Some Comments and Speculations on the Televised Curriculum

We have presented a great deal of data on the way the teachers reacted to the courses televised for their pupils. We would now like to add some comments and speculations of our own. These will be based partly on the data we have presented, and partly on our observations. In discussing the assets and liabilities of the various courses, attention is often legitimately focused on the television teacher and the director, for these two give each course its particular shape. We will take a somewhat different approach. We will focus instead on the particular characteristics and problems of the various subjects included in the televised curriculum as they were related to the expectations, desires, and habits of the classroom teachers. Although we will be looking at the courses for each subject as they were presented during the first two years of the ETV Project, we will try in this way to look at the factors which probably would have affected teacher reaction regardless of the peculiar merits or skills of the television teachers and directors involved. In short, we will try to place the teachers' reactions in their cultural context. Of course, our comments are only opinions. Other views may be equally valid.

We will discuss each subject in turn;

Social Science: It will be recalled that courses for this subject generally received low overall ratings from the teachers, and that the frequency of complaints that they covered "too much material" was generally very high. It also appears that dissatisfaction over "too much material" being covered was relatively much more important, compared to the other kinds of complaints, for the overall ratings. What might this mean?

It seems very likely that the very kind of material covered brings the televised Social Science courses into unusually severe conflict with what is the instructional "norm" in Colombia -- rote memorization. This conflict is quite possibly a principal source of Social Science's difficulties. Most of the material concerns history, civics, and geography. When such material is involved, Colombian teachers are likely to feel that learning consists primarily of memorizing names, places, happenings, and dates. This is the expectation or goal which their experience has led them to have for Social Science. When the quantity of material presented is so great that it defies such treatment, as is almost inevitable when telecasts attempt to cover accurately broad snatches of such "factual" material quickly, the teachers become frustrated. Taking rote memorization as their goal, they feel that too much has been asked of them and of their pupils. As a result, they rate the courses lowly, and complain about the quantity of material covered.

There is no simple solution. The problem is imposed by the characteristics of the subject, and the "norms" of Colombian education. To conform to the demands of rote memorization would defeat one of the purposes of the ETV Project, which is to emphasize the learning of broad principles and ideas, and to inculcate the ability in pupils to generalize or transfer learning from one situation to another. On the other hand, a low opinion of a course probably places it in danger of receiving less effort, attention, and enthusiasm from teachers in their very important "motivation" and "follow-up."

What might be done? The situation would seem to call for an effort to change the teachers' expectations through clear and unequivocal statements of the true goals for each telecast and quite specific suggestions for "motivation" and "follow-up" (presumably in the Teacher Guides). Hopefully, this would deter the teachers from setting inappropriate and wrong-headedly ambitious goals for Social Science, and would relieve their frustration by providing them with clear-cut means for the ready accomplishment of what is desired. However, as a subject Social Science definitely presents a special challenge for televised instruction in Colombia.

Natural Science: The courses for this subject generally received very high overall ratings. Compared to other courses in other subjects, specific complaints about the Natural Science courses were relatively few. In these respects, Natural Science stands in contrast to Social Science. It also stands in contrast in another important respect: the kind of material covered does not arouse to the same degree the same expectations among the teachers. At the primary level, the principles or "facts" for which memorization might be demanded in Natural Science are relatively few. If the teacher insists on memorization, but cannot cover all that he might, he probably feels less concern than with Social Science about what is left out. In addition, Natural Science offers unusual opportunities for demonstrations and examples of which considerable advantage has been taken -- live animals in the studio, film clips of industrial processes or farming methods or visits to the jungle or mountains, Indian artifacts, and the like. As a subject, then, Natural Science has certain special advantages for televised instruction in Colombia, which apparently (given the high overall ratings) have been well capitalized on.

Mathematics: The courses for this subject generally received middling to low ratings. The teachers more frequently made complaints in above average numbers for the courses for the lower grades than they did for those for the higher grades. The complaint most important for the overall ratings was that the telecasts "entertained, but taught very little," for which complaints also were several times above average for the courses for the lower grades. Complaints that the children "learned only from the 'motivation' and 'follow-up,'" and not from the telecasts, also were several times above average for the courses for the lower grades.

The Mathematics courses were couched in the "new math," which the teachers themselves had to learn.[12] They were probably often perplexed by the telecasts themselves. Apparently, they found their pupils following the telecasts with high interest, but they felt that the younger children did not learn much of use from them. As a result, as was suggested earlier, they complained about "entertaining," and about the pupils having to learn everything from "motivation" and "follow-up." Without extensive data on pupil achievement, we cannot say whether the teachers are right or wrong. However, it does seem clear that they are confused and troubled by the courses in this subject. Like Social Science, the Mathematics courses would seem to call for clear-cut statements of goals and specific instructions for "motivation" and "follow-up," in order to relieve teacher frustration and provide a sense of accomplishment. The "new math," too, would seem to pose a special challenge for televised instruction in Colombia.

Lenguaje: The courses for this subject generally received middling overall ratings. The most frequent kind of complaint made was that the telecasts "entertained, but taught very little," and for these courses this complaint was the most important by a considerable margin for the overall ratings. We have little to add to this. Our observations lead us to agree with the teachers. There has been a great use of attention-holding devices, such as clowns, which have probably actually diverted the pupils' attention from the material to be learned. Learning can be fun, but not all fun is useful learning. In addition, this subject, whether televised or not, probably involves the greatest mixture of pedagogical goals of any included in the televised curriculum. Since there are few books in Colombian schools, it does not concentrate on reading. Instead, it deals a little with penmanship, a little with manners and conduct, a little with story-telling, a little with grammar and parts of speech. By and large, it emphasizes verbal skills. It has been relatively easy, then, to lose sight of instructional goals in favor of a lively presentation. What would seem to be needed is a reconsideration of the desired instructional goals, so that the telecasts can be more readily made to conform to them.

Music: The Music course was generally very popular with the teachers. It is a pioneering venture, for the subject is usually not included in the Colombian primary school. Although it is helpful for the classroom teacher to learn some musical principles to guide him in his "motivation" and "follow-up," and probably the pupils also learn some principles, such learning is not its principal goal. Instead, it aims at the involvement of the teacher and pupils in musical participation, appreciation, and pleasure. Utilization Volunteers frequently reported that their teachers were fearful over their ability to sing or lead the class in song. Yet, by all reports, most teachers eventually found that they could do so. It is almost axiomatic that once a person achieves success in this kind of endeavor, he comes to enjoy it. In turn, this increases the likelihood that he will be willing to take a similar role in another context. Some may think of music as a frill. However, it would seem to provide an extremely good vehicle for bringing teachers into more outgoing and dynamic interaction with their classes. In this respect, Music may have beneficial consequences far beyond its own goals.

Part VII: Teacher Reactions to the Teacher Guides

The Teacher Guides are a very important part of the televising of instruction for pupils in the ETV Project. For each televised course, there is a different Guide, issued at regular periods. The Guide gives the schedule of telecasts, outlines the content of each telecast, and provides suggestions for the classroom teacher's "motivation" and "follow-up." The classroom teacher depends on the Guide for knowing what she should do, and when she should do it. The Guide is the foundation for the classroom teacher's critical role in the televising of instruction for pupils.

We asked a number of different questions about the Guides in the four surveys at the end of the semesters. In the first three, there was a Guide "dissatisfaction inventory" similar to that used for the courses. In the final survey, we used only a single question which dealt with the success of the various Guides in providing advance information for lesson planning by the teachers. We made the change because the frequencies of complaints on the Guide inventory were smaller than for the courses, making comparisons between Guides difficult. We felt that a single question, focused on the primary goal of the Guides and modelled on the question used successfully to obtain course ratings, would provide more useful information for directing efforts toward Guide revision. Moreover, the results of the inventory in the three previous surveys had provided a good picture of the teachers' overall dissatisfactions with the Guides.

We will present here data on the Guides only from the surveys made at the end of each of the two semesters of 1965. The "dissatisfaction inventory" in the first of these two surveys covered more kinds of complaints than those used previously, and the picture given by this survey of the general pattern of complaints is the most complete and useful, since Guides for more courses were involved (15, instead of the first year's 10), far more teachers were covered by the survey than in any of the first year, and the results are the most recent of this kind. Also, we will present only the overall, or average, results for all the Guides.[13] Guide by Guide analyses were included in previous reports for all the surveys, and a detailed review at this time would serve little purpose.[14] Here, we will look only at the overall pattern.

The data from the second of these surveys, made at the end of 1965's second semester, permits us to rank the Guides for each of the 15 courses as to the degree which the teachers found they gave enough advance information for lesson planning.

The data for the Guide "dissatisfaction inventory" for the first semester of 1965 appears in Table 8:11. The per cent for the complaint that the Guides did not arrive prior to the beginning of a series of telecasts (which would be "on time") is striking. In this survey, half of the teachers, on the average, made this complaint about each of the Guides for the 15 courses. In previous surveys, the per cent also was very high. For the first semester of 1964, it was 37.4; for the second semester, 42.3. This reflects a serious Guide production and distribution breakdown which plagued the project during its first year and a half.

Ostensibly, the Guides are a Colombian responsibility, with writing and organization in the hands of the television teachers and their assistants, stencilling and production by Multilith in the hands of the Instituto de Radio y Television (the semi-public broadcasting agency which provides studio and transmission facilities), and distribution in the hands of local school officials. From the beginning, the system failed to mesh. Efficiency may have increased with each semester, but it did not keep up with project expansion for more courses meant more kinds of Guides, and more teachers using television meant both a greater quantity of Guides and wider distribution.

Table 8:11: Teacher Dissatisfactions With the Teacher Guides, for the First Semester, 1965 (Third Semester of the ETV Project)

	Average of Per Cents Making Complaint for Each of the 15 Guides
Dissatisfactions Over Content on Individual Programs:	
Guides do not give sufficient information to prepare lesson in advance	11.6
Guides are not clear	6.5
Guides do not correspond to programs	6.0
Guides give erroneous impression of program content (even when they correspond generally)	3.6
Guide suggestions are not practical and cannot be followed	3.2
Other Dissatisfactions:	
Guides do not arrive on time	50.4
Program schedule is difficult to follow	9.8

N = 15 Guides, one for each televised course. Number of teachers on which complaints are based for each Guide is approximately the same as the number of teachers rating the course, for which the N's are shown in Table 8:1.

It is impossible to specify a single cause. Because of the tight schedule for producing telecasts, and the understandable priority given to the telecasts themselves, Guide writing often was behind schedule. Typists, overworked and hurried, made errors. The Multilith sometimes could not handle the resulting deluge of late stencils, and sometimes production was interrupted by mechanical failures. Assembly and stapling was often unplanned for, and depended on Volunteers and teachers, who could not work on a Guide until its last page was done, so that these, too, lagged. Local school officials often were slow in distribution. And, sometimes, Colombian estimates of the quantities needed fell short. As a result, Guides often reached teachers after their first need of them, and frequently, when the total number was insufficient, Guides had to be shared.

During this year and a half, only the persistent efforts of Volunteers in every area except the actual writing -- in organizing, scheduling, coordinating, and in the actual assembly, stapling, and distribution -- kept the problem within the rather large bounds reflected by the data. For the project's fourth semester, an arduous and thorough tightening of the system at every point seemed to solve the problem. Since the data had thoroughly illustrated the breadth of what was obviously a serious problem, we eliminated the item along with the others in the inventory for the survey at the end of 1965's second semester.

The other results from the "dissatisfaction inventory" give the pattern of teacher concern over the Guides. The most frequent complaint, on the average for all the Guides for the 15 courses, was that the Guides did not give sufficient information to prepare lessons in advance

(11.6), closely followed by the complaint that the telecasting schedule was difficult to follow (9.8). Somewhat less frequent were the complaints that the Guides were not clear (6.5), and that they did not correspond to the telecasts (6.0). The latter reflects changes in telecasts made after the Guides were completed, and errors in the broadcasting schedule and a spate of errors in the scheduling of the telecasts which occurred during the semester, as well as some teacher errors in following or interpreting the Guides. Relatively infrequent were the complaints that the Guides gave an erroneous impression of telecast content when Guide and telecast corresponded generally (3.6), and that the Guides were not practical in their suggestions, and could not be followed (3.2).

In regard to using the material in the Guides about each telecast, then, the teachers were most concerned about not getting enough information. The average per cent for this complaint (11.6) is almost twice that for the next most frequent complaint directly connected with what the Guides said about the telecasts, lack of clarity (6.5). The difficulty of following the schedule, although important and cited on the average by about one out of 10 teachers for each of the Guides (9.8), concerns only the timetable, and not the content about the television itself.

In our final survey, made at the end of the second semester of 1965, we asked the teachers to rate each of the Guides in roughly the same manner as we asked them to rate each of the courses. There was a single question which was the same for each Guide. The question focused on the adequacy of the information provided for lesson planning. This was both the primary purpose of the Guides, and cause of the greatest degree of teacher dissatisfaction with Guide content, as shown in the previous survey, and thus promised to be the most meaningful basis for comparing Guides with each other. The question asked the teachers whether the Guide had given sufficient information for lesson planning for all of a course's telecasts, or only for some lesser number. We took the per cent saying "for all the telecasts" as an index of teacher satisfaction with each Guide. Then we ordered the Guides by these per cents, from greater to lesser teacher satisfaction.

The results for the 15 Guides, one for each of the televised courses, are shown in Table 8:12. The Guides are listed in order of teacher satisfaction, with the most favorably rated at the top. As can be seen, there is some variation in teacher satisfaction with the various Guides. However, slightly less than 20 percentage points separate the highest and the lowest rated Guide, compared to 30 percentage points separating the highest and lowest rated courses for the same semester (see Table 8:1), which were evaluated by the teachers in a similar manner. This suggests that teacher satisfaction with the Guides tends to be more uniform, or more closely alike for all Guides, than for the courses, whatever the absolute level of satisfaction may be.

As to the rating of the various Guides, it is noteworthy that of the five Mathematics Guides, three are at the bottom; that the Guide for Natural Science V stands out slightly at the top, and that all four of the Natural Science Guides are among the top half. We would also like to point out that the three Mathematics Guides at the bottom are for the three courses for the lower grades which received a frequent number of above average complaints (see Table 8:6), and that two of these received above average complaints that the telecasts only "entertain" and that the children only learn from "motivation" and "follow-up" -- that is, the work of the teacher based on the Guide. This would seem to support our suggestion that one place to start to improve teacher satisfaction with these courses is with the Guides, in making the courses' instructional goals more clear-cut and the instructions for "motivation" and "follow-up" more specific.

As to the absolute degree of teacher satisfaction with Guide information, it should be noted that the most favorably rated Guide (Natural Science V) was judged to have provided adequate information all of the time by only about six out of every 10 teachers using it, and that, on the average, only about five out of every 10 teachers judged Guides as having provided adequate information. Since giving the teachers information they believe they need for lesson planning is the Guide's function, this suggests that at the end of the project's second year there was, from the teachers' perspective, at least, considerable room for Guide improvement.

Part VIII: Other Teacher Reactions to the Televised Instruction for Pupils

In our surveys at the end of each of the four semesters during our two years of research on the ETV Project, we asked the teachers some other questions about the curriculum televised for their pupils. These covered a variety of issues -- how much help the teachers believed television could give them with their teaching, whether

Table 8:12: Teacher Rating of the Teacher Guides, for the Second Semester of 1965 (Fourth Semester of the ETV Project)

Rating: Per Cent of Teachers Saying Guide Provided Sufficient Information for Advance Lesson Planning for All of a Course's Telecasts

Teacher Guide for:	Rating:*
Natural Science V	59.1
Mathematics V	55.4
Natural Science IV	54.9
Social Science V	52.6
Natural Science III	51.9
Natural Science II	50.0
Lenguaje I	48.2
Mathematics IV	47.9
Lenguaje III	47.2
Social Science IV	47.0
Music I	46.9
Lenguaje II	45.7
Mathematics III	44.7
Mathematics II	42.0
Mathematics I	41.4
Average of ratings for all 15 Guides:	49.0

*Only teachers actually teaching with a televised course, and thus using the Guide, rated each Guide. The number of teachers on which the per cent for each Guide is based is approximately the same as for the course ratings, as shown in Table 8:1.

television became easier to teach with as time passed, whether the quality of the telecasts increased as the television teachers and directors gained more experience, whether they wanted more courses televised for their pupils and, if so, what new courses they wanted. We will briefly review their replies in this final section.

In each of the four surveys, we asked the teachers how much help they believed television could give them in reinforcing their own teaching. The possible answers were "a great deal of help," "some help," "little help," and "no help." As noted in an earlier section, the per cent saying "a great deal of help," the most positive of the alternatives, ranged from 79.7 to 91.3. We also asked this question in a survey conducted *before* telecasting began for the first semester of the *same* teachers who responded to the survey at the end of the first ~~survey~~ semester. When the replies *at the end* of the first semester are compared with those made by the *same* teachers *before* telecasting began, there is *no* indication that actual experience with television changed in any way the teachers' initially highly favorable attitude, although there were *negative* shifts over the semester in regard to attitudes about some other aspects of the project.[15] The data are shown in *Table 8:13*. As a whole, then, the teachers seemed to maintain a very strong belief in the instructional power of television throughout the first two years of the ETV Project.

In the survey at the end of the project's second semester, at the end of 1964, we asked the teachers in the sample who were in Bogota (N=66), who had had a full year of experience with television, whether they found teaching with television "easier now," "about the same," or

Table 8:13: Teacher Belief in Television's Instructional Power, 1964-1965

Per Cent Saying Television Could Reinforce Their Own Teaching "A Great Deal," the Most Favorable of the Possible Alternatives:

In Survey at:

	Before First Semester, 1964	End of First Semester, 1964	End of Second Semester, 1964	End of First Semester, 1965	End of Second Semester, 1965
	83.2	79.7	91.3	84.4	85.5
*N =	(202)**	(202)**	(69)***	(844)	(1,819)

*N is number of teachers responding to item in survey on which per cent is based.

**Sample for the survey at the end of the first semester, 1964, was a sub-sample of the approximately 750 teachers responding to the survey before the semester. Results here are based only on those responding to both surveys, after about 50 teachers who received non-typical treatment as part of a field experiment were excluded (for details, see Report No. 2: The Project's First Semester -- Pupil Achievement, Teacher Attitudes, and the Work of the Utilization Volunteer.

***Item was included only in questionnaire for Ibague teachers, although survey also included teachers in Bogota.

"more difficult" than at the beginning of the year. Eighty-one per cent said that they found it "easier," 16 per cent "about the same," and only three per cent "more difficult." Thus, after a year, four out of five teachers felt teaching with television had become easier.

In the same survey, these Bogota teachers also were asked whether they thought the quality of the telecasts was "better," or "about the same," after a year. Eighty-six per cent said the quality was "better," and only 14 per cent said "about the same." Thus, more than four out of five teachers with a year of experience with television felt that the quality of telecasting had improved over the year. This is consistent with the data in Table 8:2, which shows that the average per cent for all courses saying all the telecasts of each course were "excellent" increased from 32.3 for the first semester to 38.1 for the second semester, based on replies of teachers from both Bogota and Ibague (Tolima).

In our final survey at the end of 1965, at the conclusion of the project's fourth semester, we asked the teachers whether they wanted "more," "about the same," or "less" televised instruction for their pupils in the future. Sixty-six per cent said they wanted "more," 32 per cent said "about the same," and only two per cent said "less." Thus, at the end of the project's second year, a substantial majority of the teachers wanted the televised curriculum for their pupils increased.

In another report in this series, we show that frequent contact between a utilization Volunteer and a school and its teachers can make a great deal of difference in the smoothness with which ETV is integrated into the school's program.[16] Put simply, there is an inverse relationship between contact between Volunteer and teacher and the frequency of problems in using ETV reported by the teacher. Given this, it would not be surprising if teachers with relatively frequent contact with Volunteers were more desirous of increased telecasting than were those with relatively less frequent contact. Yet, this was not the case. Teachers with high and low contact were equally eager for more telecasting. This is consistent with the proposition that the Colombian teachers have a strong belief in television's instructional value.

In our final survey at the end of 1965, we also asked the teachers what courses they would like to have added to the televised curriculum. Up to that time, it had included the four "core" subjects of Colombian primary education -- Mathematics, Social Science, Natural Science, and Lenguaje -- and, in addition, Music, and not all of these had been televised for every one of the five primary grades. We asked the teachers about their preferences for additions to the televised curriculum in two ways -- by a multiple-choice question asking which of the five subjects already included for at least one grade they would like added to grades where they were missing, and by an open-end question asking for suggestions for completely "new" subjects.

The form of the multiple-choice question permitted teachers to pick a course other than one for their own grade, which they would have to teach with themselves. This provided an indirect check on the validity of the results, reported above, which indicate that the teachers wanted more telecasting. Conceivably, a teacher might say he wants more telecasting, but not be interested in increasing his own teaching with it. If this were the case, and the replies about wanting more telecasting insincere, teachers might frequently choose courses outside their own grade for addition to the televised curriculum. This did not occur. Only about 13 per cent of the teachers named courses for grades other than the one they taught. Thus, these replies on preferences support the result that the teachers wanted more telecasting.

The preferences at this time of teachers in each grade for the filling out of the televised curriculum were as follows (subjects in parentheses were those televised at the time for each grade): First Grade (Music, Mathematics, Lenguaje): Natural Science preferred by better than 3-to-2 over Social Science; Second Grade (Mathematics, Lenguaje, Natural Science): Social Science only slightly preferred over Music; Third Grade (Mathematics, Lenguaje, Natural Science): Social Science preferred by 2-to-1 over Music; Fourth Grade (Mathematics, Natural Science, Social Science): Lenguaje preferred by better than 2-to-1 over Music; and Fifth Grade (Mathematics, Natural Science, Social Science): Lenguaje preferred by better than 2-to-1 over Music.

In regard to the open-end question seeking suggestions for "new" subjects, 592 of the 1,884 teachers responding to the survey wrote in a reply, and these 592 made a total of 810 suggestions. Thus, about one-third of the teachers suggested one or more possible "new" subjects, and about half of these made more than one suggestion. Over half (55 per cent) of the 592 teachers wanted televised courses in religion and morals; about one-third (31 per cent) wanted courses in handicrafts and manual arts; slightly more than one out of 10 wanted courses in physical education (13 per cent) and art and drawing (12 per cent); and fewer than one out of 10 wanted courses in home economics and hygiene (8 per cent), civics and community life (7 per cent), and etiquette and good behavior (7 per cent). No other broad category was named by more than two per cent.

Summary and Discussion

In this report, we have presented a variety of data on the reactions of the Colombian classroom teachers to the courses televised for their pupils and to the Teacher Guides. The source of the data was four teacher surveys conducted at the end of each of the two school semesters of 1964 and 1965, the two years of our research on the Peace Corps ETV Project in Colombia.

Before briefly reviewing our major findings, we would like to emphasize again, as we did at the beginning, that we are dealing with what the teachers themselves thought about the courses and the Guides. We are dealing with their opinions. Whether these are justified or not, whether they reflect fact or misguided fancy, is another question. The fact is simply that these are the opinions which our measurements suggest existed.

Through our analyses, comments, and speculations, we have tried to reveal as much as possible about these opinions in the belief that knowledge of them would be useful for making new decisions. For our treatment of the data, and the interpretations we give them, we must take the responsibility.

At the outset, we would like to make clear one methodological point. It is that every measurement reflecting opinion toward a televised course or its Teacher Guide is based solely on the responses of teachers who actually taught with the course for the full semester preceding the survey. Thus, we are dealing with the opinions of teachers thoroughly familiar and actively involved with the courses.

In regard to the teachers' ratings of each course as a whole, the major findings were these:

1) In every one of the four semesters, the degree of approval given by the teachers to the various televised courses varied markedly.

2) Over the two years, there was considerable consistency in the relative standings of the courses. Courses in Natural Science generally received the highest ratings. Courses in Social Science generally received the lowest ratings. Courses in Mathematics and Lenguaje received middling ratings, with Lenguaje faring slightly better. The one course televised in Music during the second year of the project received a quite high rating.

3) As time passed, and procedures improved as the project expanded to new areas and took in more teachers, the degree of approval given to the televised curriculum as a whole by the body of teachers using the telecasts in their teaching increased.

4) The revising of the Social Science courses for the second year did not clearly raise their relative standing with the teachers.

5) If the ratings given the courses with which the teachers were most satisfied are taken as the level which a course must achieve to have a "high" or "satisfactory" rating, then a goodly number of courses during the two years failed to achieve such a rating.

The teachers' course ratings permitted us to rank the courses by degree of teacher satisfaction for each of the semesters. We would suggest that such rankings provide a useful basis for soul-searching and possible action. If teachers are relatively dissatisfied with a course, it is reasonable to attempt to find out why, and to consider doing something about it. If time and people are in short supply, it is reasonable to concentrate the limited resources available for making changes on those courses with which the teachers are least happy. We consider gross differences in teacher satisfaction with the courses undesirable, since for every 15 minutes of the television the teacher is expected to do 30 minutes of complementary teaching, and it seems unlikely that a teacher will give the same effort or enthusiasm to a course he holds in relatively low esteem as he will to one he holds in higher regard.

One way of finding out why the teachers were relatively dissatisfied with certain courses was to ask them. We did this by constructing a seven-part "dissatisfaction inventory," which covered all the aspects of the courses which an extensive collecting of complaints suggested the teachers were able to single out. In the surveys at the end of each of the two semesters of 1965, the teachers completed this inventory for each course, along with making the overall rating.

We analyzed the results of this "dissatisfaction inventory" in several ways. Each was intended to bring out a different facet of the data. We used a variety of analyses in order not to overlook anything, and to get as full an understanding of how the teachers felt about the courses as possible. We looked at the results for all the courses, or the televised curriculum, as a whole, then at the specific complaints made with noteworthy frequency about particular courses, and finally at the relationship between the making of the specific complaints and the making of the overall ratings.

In regard to the complaints or dissatisfactions with the televised curriculum as a whole, which we examined by taking the averages of the per cent of each of the seven complaints for all the courses, the major findings were these:

1) The two most frequently made complaints were that the televised courses "cover too much material," and that the children could not "see clearly objects, maps, and things which are shown." On the average, about one out of five teachers made these complaints.

2) Slightly more than one out of 10 teachers, on the average, complained that the children "learn only from 'motivation' and 'follow-up,'" and that the programs "entertain, but teach very little."

3) Slightly less than one out of 10 teachers, on the average, complained that the programs "do not teach concepts, but only facts," and that the programs "teach little the classroom teacher cannot teach." The first of these, about not teaching "concepts," was included because we occasionally heard exactly this complaint from teachers. However, its meaning is ambiguous, for the Colombians seemed to mean that the programs did not provide axioms for rote memorization, while we might take it to mean that they did not encourage generalization or the forming of broad, meaningful ideas. Further analysis indicated that it could be ignored, for complaints on this count varied little among the courses, making it difficult to single any out, and the making of

this complaint turned out to have no relationship to the making of the overall ratings.

4) Very few teachers -- about three out of ~~10~~ 100 on the average -- complained that the "television teacher does not have a good personality for television."

In regard to the pattern of specific complaints about each of the courses, the quantity of data involved is quite large. Since there were 15 courses televised during each of the two semesters, and seven kinds of complaints or dissatisfactions measured for each course for each semester, there are a total of 210 measurements (15 courses x 2 semesters x 7 complaints = 210). We tried to make interpretation manageable by looking at general trends, and outstanding deviations from the average trend. We first looked at the pattern of complaints for each course by noting those which fell somewhat above or below the average for all courses. Then we looked at the courses receiving a relatively large number of any kind of complaint, by taking note of the actual frequency of those making above average numbers of complaints. At the same time, we tried not to lose sight of the fact that any frequently made complaint, whether above or below the average was probably important. Thus, we looked at the patterns, at the courses receiving an above average number of complaints of any kind, and at the relatively frequently made complaints. Even with these approaches, however, the number of findings, discussed fully in the text, is large. We can only cover the highlights here. These included the following:

1) Above average numbers of complaints of various kinds were made most often about courses in Social Science, Lenguaje, and Mathematics,

relatively infrequently about the one Music course, and in only one instance about courses in Natural Science.

2) The patterns for courses in Lenguaje suggested that the teachers thought they only "entertained, but taught very little." The patterns for courses in Mathematics suggested that, at least for the courses for the lower grades, the teachers thought they held the pupils' interest without imparting much knowledge. This was indicated by above average complaints that the telecasts only "entertained," and that the children learned only from the teacher's "motivation" and "follow-up." The patterns for courses in Social Science suggested that the teachers thought they covered "too much material." The patterns for courses in Natural Science simply suggested high general satisfaction, since out of 56 measurements (4 courses x 2 semesters x 7 complaints = 56) only one was above average.

3) In regard to the actual numbers of above average complaints, Social Science courses, on the complaint that they covered "too much material," stood out above all others. For the first semester of 1965, when the average for all courses for this complaint was 23.2, the per cent making the complaint for Social Science V was 58.5 and for Social Science IV, 45.7; for the second semester, when the average was 17.7, the per cent for Social Science V was 31.9 and for Social Science IV, 21.4. In the first three instances, these were the most frequently made of any kind of complaint about any course during the year.

4) For the complaint that the children are not able to "see clearly objects, maps, and things," Mathematics I stood out for both semesters, and Lenguaje I in the second semester. For the complaint that the

children learn only from the teacher's "motivation" and "follow-up," Mathematics I again stood out for both semesters, and Mathematics II for the second semester. For the complaint that the programs only "entertain," all three Lenguaje courses (I, II, and III) stood out for both semesters.

In examining the results of the "dissatisfaction inventory," we were able to get a useful picture of things about each course to which the teachers particularly objected. As with the overall course ratings, this information seems to us to provide a valuable basis for reflection and the making of decisions about revising courses. We would not suggest that a course is flawed in a particular way simply because the teachers seem to think that it is. However, we would suggest that when the teachers are dissatisfied to an unusual degree with a course on a particular count, then the course merits special attention in regard to the alleged deficiency. If a course is to be revised, it seems reasonable to pay some attention to what the teachers dislike about it. However, research results are no substitute for astute judgment. If the teachers seem to be misguided in their complaints, then at the very least some kind of information campaign is probably called for to justify the course to them and reduce their dissatisfaction, for their dissatisfaction, right or wrong, remains in itself a fact.

In relating the making of the complaints to the making of the overall ratings, we took two approaches. In one, we measured the degree of similarity obtained between ranking the courses by the frequency of complaints and by the overall ratings. In the other, we calculated the multiple correlation between the making of all the complaints for the courses grouped by subject, and as a by-product obtained "weights" showing the role, or importance, for each subject of each of the complaints in the making of the overall ratings. The major findings were these:

1) The degree of similarity between ranking the courses by the average for each course of all seven kinds of complaint and by the overall ratings is quite high. The rank order correlation coefficient for the first semester of 1965 is .732 ($p. < .005$), and for the second semester, .779 ($p. < .001$). This indicated that the complaints as a whole did seem to have something to do with the overall ratings. They are of valid concern.

2) The degree of similarity with the ranking by overall rating attained by rankings on the basis of the various specific complaints is less than that attained by the average for each course of all the complaints. For five of the complaints -- that the children can't "clearly see objects," that they learn only from "motivation" and "follow-up," that the programs only "entertain," that the programs "teach little the classroom teacher cannot teach," and that the television teacher "does not have a good personality for television" -- either led to significant (taking .05 as a criterion) or near-significant similarity of ranking for both of the semesters of 1965. The ambiguous complaint that the programs "do not teach concepts" led to a very low degree of similarity that was very far from being significant. Surprisingly, the most frequently made complaint for the televised curriculum as a whole -- that the courses "cover too much

material" -- led to rankings with a relatively low degree of similarity to the ranking by overall ratings, and these were not significant. This hinted that while this complaint may be important for the overall rating for some courses, it was not so for all. This was later confirmed when we assessed the weight of each complaint in the making of the overall ratings.

3) The multiple correlation coefficients between the complaints as a set and the overall rating for the courses grouped by subject (Natural Science, Social Science, etc.) ranged from .311 to .591, and were all highly significant ($p. < .001$). This gives further support to the contention that the complaints do figure in the overall ratings, and in themselves are of valid concern. These correlations were "depressed" because the complaints were measured dichotomously, forcing us to use point biserial correlations in calculating the multiple correlations.

4) These multiple correlations were consistently higher for the second semester of 1965, hinting that the body of teachers evaluating the courses may have increased their use of rational, practical (and thus, more appropriate) criteria in judging the courses over the year. This interpretation rests on the assumption that the "dissatisfaction inventory" provides a reasonably exhaustive catalogue of such criteria, which its construction from the collection and grouping of an extensive number of actual complaints made by teachers would suggest.

5) The weighting of each complaint in the overall rating, which indicates whether the making of each complaint led consistently to giving the courses a lower rating, turned up a surprise. For the four

subjects whose courses were involved in the analysis (Natural Science, Social Science, Lenguaje, and Mathematics), the complaint that the programs only "entertain" almost invariably played the largest role in the making of the overall ratings. This was so in seven of the eight analyses (4 subjects x 2 semesters = 8). This was even so for the subject whose courses had the highest ratings and received the least frequent complaints, Natural Science. It was particularly important for courses in Lenguaje, which might be expected on the basis of the high frequency of complaints for these courses on this count. Its ubiquity, however, suggested to us that this might be a particularly sensitive issue with the teachers because of culture-based values which hold pleasure and learning as inconsistent. If so, we suggested, this concern among the teachers poses a serious threat to their satisfaction with any modern approach to education that can probably best be countered by maintaining a clear-cut focus on the serious instructional goals of the televised courses. This would be a job for the utilization Volunteers and the Teacher Guides, and need not affect the content of the programs at all.

6) The most frequently made complaint -- that the programs "cover too much material" -- proved to be important primarily for the overall ratings of the Social Science courses.

7) The ambiguous complaint that the programs "do not teach concepts" was not related to the overall rating for any of the subjects. It will be recalled that complaints on this count did not vary much among the courses, making it difficult to single out particular courses, and that it did not lead to rankings of the courses that could be said

to be similar to those obtained from the overall ratings. As a result, we concluded that this item could be dropped if the "dissatisfaction inventory" is used again.

8) The six other complaints all showed some sign of being related to the overall rating for at least one subject in one of the two semesters, although the complaint that the programs only "entertain" overshadowed the others. However, the weight of some in the overall rating was relatively slight. Nevertheless, we did not feel justified in concluding that any of these items could be dropped. For one thing, the weights are based on the analysis of the overall ratings of courses grouped by subject, obscuring differences among the courses of one subject. If a complaint had any weight for any course at any time, there is always the possibility that it might also have some weight for new and different courses in the future. Thus, for the purpose of deciding on the composition of the inventory, we were inclined to take seriously any sign in our analysis by subject that a complaint was related to the overall ratings. Furthermore, all of these six remaining complaints showed other signs of being useful. They were either fairly frequent, varied enough among courses so that particular courses could be singled out, or produced rankings fairly similar to those obtained from the overall ratings. Thus, we concluded that the six remaining complaints should be included if the "dissatisfaction inventory" is used again.

In addition to these analyses of the data on teacher reactions to the televised curriculum, we also offered some speculations and comments based partly on the analyses and partly on our observations. In these, we focused on the particular problems of the courses in each subject as they seemed to be related to the expectations, desires, and habits of the Colombian classroom teachers. In effect, we tried to suggest problems of the televised curriculum which may be culture-based.

We suggested that Social Science courses may pose a special difficulty because the material in such courses is the most likely of any to be seen by the teachers as requiring rote memorization. Most of it concerns history, civics, and geography, and when names, places, happenings, and dates are involved, Colombian teachers are likely to doubt that learning takes place unless all of these are memorized. When more information of this type than the pupils can memorize is presented, the teachers become frustrated. As a result, they complain that the programs "cover too much material." We suggested that what is required is a calculated effort to reduce the teachers' misguided aspirations through clear-cut statements of reasonable instructional goals in the Teacher Guides, and by giving the teachers an increased sense of accomplishment in their teaching with the television by providing explicit instructions for "motivation" and "follow-up."

We suggested that the very popular courses in Natural Science pose an antithesis to the usually lowly rated courses in Social Science in this respect, because the teachers did not have similar expectations to an equal degree about the material. We suggested that the teachers often complained about the courses in Mathematics "entertaining" because they felt the pupils watched with interest without learning. We do not know whether the teachers are right or wrong about this, but we do think the data suggests that they are confused by the Mathematics courses, which emphasize the "new math." The remedy, we suggested, might be similar to that for Social Science -- clear-cut statements of goals and specific instructions for "motivation" and "follow-up." We noted that we were inclined to agree with the teachers that the courses in Lenguaje placed too much emphasis on "entertainment," and we suggested a reconsideration of the courses' instructional goals, so that the telecasts could be judged more clearly in their light. We noted that the course in Music had unique goals of pleasure and participation, and we suggested that the subject might prove a valuable vehicle for encouraging teachers to interact more dynamically and spontaneously with their classes.

In regard to the teachers' reactions to the Teacher Guides, we presented data only from the surveys at the end of each of the two semesters of 1965. In the first, the teachers completed a Guide "dissatisfaction inventory" similar to that used for the courses. In the second, they answered one question about the success of each Guide in meeting its principal function -- to provide information for advance lesson planning -- which permitted ranking of the various Guides. The major findings were as follows:

1) In regard to what the Guides had to say about the telecasts themselves, the most frequent complaint was that the Guides "do not give sufficient information to prepare lessons in advance." On the average, for all the Guides for the 15 courses, somewhat more than one out of 10 teachers made this complaint.

2) Almost as many -- slightly fewer than one out of 10 -- complained that the program schedule was difficult to understand.

3) About half of the teachers complained that the Guides "do not arrive on time." In earlier surveys, between 37 and 42 per cent, on the average, made this complaint. This reflected a logistics problem quite apart from the content of the Guides, which apparently has been since solved.

At the end of the second semester of 1965, the teachers were asked for how many of the telecasts for each course the Guide had provided sufficient information to prepare lessons in advance. We used the per cent saying "for all the telecasts" as an index of teacher satisfaction with each Guide. Thus, this overall rating for each Guide focused on the Guides' principal purpose. The major findings were as follows:

1) There was less variation in the rating of the Guides than there was for the courses, whose overall ratings were based on a similar question, suggesting that the teachers were more uniformly satisfied with the Guides, whatever their absolute level of satisfaction may have been.

2) Although the smaller degree of variation in ratings made it difficult to make distinctions, it was noteworthy that the four Natural Science Guides were among the top half, that the Natural Science V Guide stood out slightly at the very top, and that of the five Mathematics Guides, three were at the very bottom. It also was noteworthy that the three Mathematics Guides at the bottom were those for the courses for the lower grades, about which the teachers complained with above average frequency that they only "entertain" and that the children only learn from "motivation" and "follow-up." The latter complaint would suggest that the teachers feel particularly

dependent on the Guides for these courses, which they apparently find inadequate. This gives some support to our suggestion that one way to overcome teacher dissatisfaction with these courses is to make the goals set forth in the Guides more clear-cut, and the instructions for "motivation" and "follow-up" more specific.

3) The most favorably rated Guide, for Natural Science V, was said to have provided enough information for advance lesson planning for all telecasts by only six out of 10 teachers. On the average, for all Guides, only five out of 10 teachers gave this degree of approval. Since information is the Guides' business, it would seem that, from the teachers' perspective, there is considerable room for Guide improvement.

In our four surveys at the end of each of the two semesters of 1964 and 1965, we also asked a number of other questions about the televised curriculum. The major findings were as follows:

1) Throughout the two years, the teachers expressed a strong belief in the instructional power of television. When asked how much help they thought television could give them in their teaching, the per cent saying "a great deal," the most favorable of the several alternatives, ranged from 79.7 to 91.3.

2) At the end of the first year of the project, a small sample of teachers who had been teaching with television for a full year were asked whether they found such teaching "easier," "about the same," or "more difficult" than when they started. Eighty-one per cent, or four out of five teachers, said they found it "easier." Thus, the teachers themselves say that they become better adapted to the demands of television as time passes.

3) These same Bogota teachers were asked whether they thought the quality of the telecasts had improved over the year. Eighty-six per cent, or more than four out of five, said they thought so.

4) In our final survey at the end of 1965, we asked the teachers whether they wanted "more," "about the same," or "less" televised instruction for their pupils. Sixty-six per cent, or two out of three teachers, said they wanted "more," and 32 per cent said they wanted "about the same." Thus, a strong majority favored an increase in the televised curriculum.

5) In the same survey, a question on which courses the teachers would prefer if additions were made provided a check on their sincerity in wanting more courses by allowing them to choose courses for grades other than the one they taught. If there had been a strong tendency to choose courses for grades other than the teacher's own, it would have indicated that the teachers really did not want anything to do with more television. As it turned out, only 13 per cent named courses for grades other than their own. Thus, we feel confident that the teachers really wanted more television.

We will now make some final comments. We feel there is considerable evidence in our survey results that the teachers as a whole are strongly favorable toward televised instruction. They have a strong belief in its instructional power, and they want more of it. We also feel there is evidence that the degree of approval given the televised curriculum by the body of teachers reached by ETV has increased as time has passed. We think that these attitudes of the Colombian classroom teachers provide a promising foundation for the further development of the ETV Project.

We do not think it reasonable to interpret the teachers' dissatisfaction with any course merely as evidence of negativism toward the project. Instead, the teachers' opinions should be taken as bases for reflection and action aimed at improving the televised curriculum. The teachers' opinions should be taken as a guide to trouble spots. In such a new and ambitious undertaking, it would be extraordinary if all the courses met with uniform acceptance, or all were alike in the kinds or frequencies of complaints they aroused. In the circumstances there is considerable reason for optimism in the fact that our measurements were able to show differences, because this indirectly suggests that the teachers were really interested in the courses. They gave them some thought, and reached different conclusions about each. Their cooperation with our surveys, of course, also is evidence of interest. However, this does not mean that the differences measured should be accepted as permanent, or with complacency. The goal for course ratings should be high and uniform ratings, and the goal for specific complaints should be their reduction to a minimum that is the same for all courses. As long as differences exist, there is room for improvement.

Although it is always tempting when looking at possible flaws to think only of the persons responsible for producing a televised course, we would also suggest that some consideration be given to culture-based factors that might affect teacher satisfaction. We think such an approach might be useful not only because it directs attention away from personalities toward ideas, and makes constructive action possible even when personnel cannot be changed, but also because these factors are likely to be important in themselves.

In several instances, we have suggested that teacher satisfaction with the courses could possibly be improved by more clear-cut statements of instructional goals and more specific instructions for "motivation" and "follow-up" in the Teacher Guides. This should not be mistaken for a lack of interest in promoting original, inventive, and creative teaching in Colombia's classrooms as part of the ETV Project. We consider this to be an extremely important and worthwhile goal. Nor do we think that all teachers should be forced to follow any one rigid procedure. We feel that any educational scheme should give considerable free rein to teachers capable of developing their own approaches.

However, we suspect that teachers, such as those in Colombia, who lack the thorough general education and extensive special training of those in more developed countries often are not ready to try out new ways without considerable guidance.[17] When they do not have that guidance, they become uncertain over what should be accomplished or just what they should do. The result may be inaction, frustration, and resort to old, "safe" goals -- such as the rote memorization by pupils of everything presented. We think that one likely source of teacher dissatisfaction with the televised courses is just this kind of uncertainty. Our results suggested, too, that many teachers felt that they did not always get enough information from the Guides. What we advocate, then, is that the Guides take account of the teacher who is uncertain and afraid to act on his own by providing clearer information for those who need it. We would also advocate that the utilization Volunteer do an even more thorough job in assisting the teacher to use the Guides, and that he make a special effort to feed back the teachers' reactions to the Guides to those who prepare them.

We would like to emphasize again that in regard to the courses and Guides we measured the teachers' opinions, and that the only fact is that our measurements indicated that certain opinions existed. The rightness or wrongness of what the teachers thought is a separate issue. This means simply that what we have presented does not in any way relieve anyone of the critical responsibility of passing judgment or making decisions about the televised curriculum. Nor does what we have presented reduce the need for such judgments or decisions. Instead, it should provide a spur and a guide.

FOOTNOTES

[1] For more on the problems of using television in the schools, see Reports No. 4 and 5 (*), this series.

[2] For more on the role and impact of the utilization Volunteer, see Reports No. 2, 4, and 5 (*), this series.

[3] For a discussion of possible future use for feedback of some of the procedures we used, see Report No. 10 (*), this series.

[4] For the complete results of this study, see Report No. 2 (*), this series.

[5] For details on the sampling and procedures for the first of these surveys, see Report No. 2 (*), this series. For the others, see Report No. 4 (*), this series.

[6] A list of previous publications appears in the Introduction, this series. The results for both semesters of 1964 were covered in Interim Report No. 6; for the first semester of 1965, in Interim Report No. 10; and for the second semester of 1965, in "The Teacher's Perspective."

[7] For the courses in the same grade, for which the majority of evaluating teachers were the same, this leads to a slight over-estimate of the p. for differences because it does not take advantage of the fact that the responses of these teachers were correlated. It has practical significance only in fine borderline cases in which one of these differences between courses in the same grade barely missed meeting the criterion of $p. = \text{or} < .05$.

[8] In the original version, used during the first year, the six alternatives were "all," "almost all," "the majority," "some," "only a few," and "almost none." In the revised version, used during the second year, the six alternatives were "all," "not all, but almost all," "a few more than half," "a few less than half," "only a few," and "almost none." The change was made because the four middle alternatives in the first version seemed very much alike to some teachers in the number of telecasts represented. However, the response which we used as an index, "all," remained the same for all surveys.

[9] These are based on confidence intervals of .05. This means that for sample per cents of the magnitude obtained, the true per cent would be embraced by the plus and minus limits established 95 out of 100 times.

(*) Titles are listed in Reports In This Series, at the end of this volume.

FOOTNOTES continued

[10] This lack of variation is undoubtedly reflected in the low coefficients, for small differences would make the ranking less reliable and more the product of chance. However, this purely statistical explanation is not sufficient by itself, for the coefficients for the complaint that the "television teacher does not have a good personality" are reasonably high and either significant or near-significant, and variation also was slight for this complaint.

[11] Since this complaint was the most frequent, it might seem appealing to argue that complaints in this case reached some kind of ceiling, making a relationship difficult to measure by resulting in similar scores for all courses. This was not the case. Variation among courses on this count was greater than for any other complaint.

[12] For the results of a study of televised instruction in mathematics for the teachers, see Report No. 7 (*), this series.

[13] The averaging was done on the same basis as for the course complaints -- that is, the per cent making a complaint about each Guide was taken as a single score, and these were summed and divided by the total number of Guides (15) for the average.

[14] The results on the Guides were reported along with those on the courses, as outlined in footnote 6, above.

[15] For more on this study, see Report No. 2 (*), this series.

[16] For more on the impact of the Volunteer, see Report No. 4 (*), this series.

[17] For an excellent treatment of the problem of transplanting educational practices from developed to less developed countries, see Beeby, C.H. The Quality of Education in Developing Countries. Cambridge: Harvard University Press, 1966.

(*) Titles are listed in Reports In This Series, at the end of this volume.

Appendix A: Questionnaire Items

On the following pages are the questionnaire items, in English and Spanish, for which results are discussed in the text.

The item on overall course rating (from the end of the first and second semester, 1965, surveys; the version for the end of the first and second semester, 1964, surveys differed only in the wording for the middle alternatives not used in our analyses):

> Taking into account all the aspects of the telecasts for (this course*) during this semester, how many of the telecasts would you say were excellent?

_____ All
_____ Not all, but almost all
_____ A few more than half
_____ A few less than half
_____ Only a few
_____ Almost none

> Teniendo en cuenta todos los aspectos de los programas para (este curso*) durante este semestre, cuantas de las emisiones televisadas diría Ud. que han sido excelentes?

_____ todas las emisiones
_____ no todas, pero casi todas
_____ un poco más de la mitad
_____ un poco menos de la mitad
_____ solo unas pocas
_____ casi ninguna

The course "dissatisfaction inventory" (from the end of the first and the second semester, 1965, surveys):

> Which of the following problems have you encountered with the telecasts for (this course*) during this semester? (Mark all that apply. If none apply, mark none.)

_____ The programs cover too much material for the children to comprehend.
_____ The children are not able to see clearly objects, maps, and things which are shown.
_____ The programs teach little the classroom teacher cannot teach.
_____ The television teacher does not have a good personality for television.
_____ The programs entertain, but teach very little.
_____ The children learn only from the motivation and follow-up, and not from the programs.
_____ The programs do not teach concepts, only facts.

> Cuáles de los siguientes problemas ha Ud. encontrado este semestre en los programas de (este curso*)? (marque todos los que se aplican, sí no se aplica ninguno, no ponga nada).

_____ Los programas abarcan demasiado para que los niños los puedan entender.
_____ Los niños no pueden ver claramente los objetos, mapas o cuadros que les muestran.
_____ Los programas enseñan muy pocas cosas que los profesores no pueden enseñar en las clases.

*Courses were individually identified in the questionnaires.

_____ El telemaestro no tiene bastante personalidad para presentarse en la Televisión.
_____ Los programas entretienen, pero enseñan muy poco a los niños.
_____ Los niños aprenden solamente por la motivación y por el repaso y no por el programa en sí.
_____ Los programas no enseñan conceptos, solamente hechos.

The Guide "dissatisfaction inventory" (from the end of the first semester, 1965, survey):

Which of the following difficulties have you encountered in using the Guides for (this course*)? (Mark all that apply. If none apply, mark none).

_____ The Guides do not correspond to the televised programs.
_____ The Guides are not sufficiently clear.
_____ The Guides are not practical, and cannot be followed.
_____ The Guides do not give sufficient information in order to prepare in advance for the programs.
_____ The Guides give an erroneous impression of the content of the programs.
_____ The program schedule in the Guides is difficult to follow.
_____ The Guides do not arrive on time.

Cuáles de las siguientes dificultades ha usted encontrado en el uso de las Guias de (este curso*). (marque todas las que se aplican, si no se aplica ninguna, no marque nada).

_____ Las Guías no corresponden a los programas televisados.
_____ Las Guías no son lo suficientemente claras.
_____ Las Guías no son prácticas, no pueden seguirse.
_____ Las Guías no dan la información suficiente para poder prepararse para los programas.
_____ Las Guías a menudo dan una impresión errada de lo que va a ser el contenido del programa.
_____ El horario de las teleclases en las guías es dificil de seguir.
_____ Las Guías no llegan a tiempo.

The item on the adequacy of Guide information for advance lesson preparation (from the end of the second semester, 1965, survey):

In regard to the information in the Guides for (this course*) during the semester just ended, for how many telecasts would you say that you received sufficient information in order to prepare in advance a good lesson?

_____ All
_____ Not all, but almost all
_____ A few more than half
_____ A few less than half
_____ Only a few
_____ Almost none

*Courses were individually identified in the questionnaires.

En relación a la información dada por las guias de (este curso*), durante el semestre que está terminando, podría usted decir cuántos programas han recibido la suficiente información para preparar con anticipación una buena lección?

_____ todas las emisiones

_____ no todas, pero casi todas

_____ un poco más de la mitad

_____ un poco menos de la mitad

_____ solo unas pocas

_____ casi ninguna

*Courses were individually identified in the questionnaires.

Appendix B: Differences Between Course Ratings and Their Statistical Significance

The following tables show all the possible differences between the teachers' overall ratings of the televised courses for the two semesters of 1964 and the two semesters of 1965. To find the absolute difference in percentage points between the ratings of any two courses, simply find the intersection in the table for the two courses involved. If the difference reached the .05 criterion of statistical significance, it is followed by a single asterisk (*). If the difference reached the .01 criterion, it is followed by a double asterisk (**). The number of differences reaching these criteria for each semester are shown at the bottom of each table. The overall ratings are the per cent of teachers teaching with each televised course which said that all of the course's telecasts were "excellent."

In these tables, NS = Natural Science; SS = Social Science; L = Lenguaje; M = Mathematics; Mus = Music. The Roman numeral indicates the grade. In each table, the courses are listed in order of the magnitude of their overall rating, from highest to lowest. As a result, the order of listing differs for each table.

Table 8:B:1: Statistical Significance of All Possible Differences Between Overall Ratings of Courses for the First Semester, 1964 (First Semester of the ETV Project)

Course:	NS V	NS IV	L I	NS III	M I	M V	SS IV	SS III	L II	SS V
Rating:	54.5	52.2	47.1	43.4	34.6	27.3	17.0	16.7	16.4	13.6
NS V	-	2.3	7.4	11.1	19.9*	27.2**	37.5**	37.8**	38.0**	40.9**
NS IV		-	5.1	8.8	17.6	24.9**	35.2**	35.5**	35.8**	38.6**
L I			-	3.7	12.5	19.8*	30.1**	30.4**	30.7**	33.5**
NS III				-	8.8	16.1	26.4**	26.7**	27.0**	29.8**
M I					-	7.3	17.6*	17.9*	18.2*	21.0*
M V						-	10.3	10.6	10.9	13.7
SS IV							-	.3	.6	3.4
SS III								-	.3	3.1
L II									-	2.8
SS V										-

Number of Significant Differences out of a Possible Total of 45

* = p = or < .05 (two tailed test):	6
** = p = or < .01 (two tailed test):	18
Total:	24

Table 8:B:2: Statistical Significance of All Possible Differences Between Overall Ratings of Courses for the Second Semester, 1964 (Second Semester of ETV Project)

Course:	NS IV	SS IV	NS V	NS III	L I	L II	M I	M V	S V	S III
Rating:	68.1	45.4	42.1	41.1	40.6	39.2	37.5	31.5	21.0	14.7
NS IV	-	22.6	26.0	27.0*	27.5*	28.9*	30.6*	36.6*	47.1**	53.4**
SS IV		-	3.3	4.3	4.8	6.2	7.9	13.9	24.4	30.7*
NS V			-	1.0	1.5	2.8	4.6	10.6	21.1	27.4*
NS III				-	.5	1.9	3.6	9.6	20.1	26.4*
L I					-	1.4	3.1	9.1	19.6	25.9*
L II						-	1.7	7.7	18.2	24.5*
M I							-	6.0	16.5	22.8*
M V								-	10.5	16.8
S V									-	6.3
S III										-

Number of Significant Differences out of a Possible Total of 45

* = p = or < .05 (two tailed test): 11

** = p = or < .01 (two tailed test): 2

Total: 13

Table 8:B:3: Statistical Significance of All Possible Differences Between Overall Ratings of Courses for the First Semester, 1965 (Third Semester of ETV Project)

Course:	NS III	NS IV	NS V	Mus I	NS II	L II	L III	M V	M II	L I	M I	M III	SS IV	M IV	SS V
Rating:	72.2	65.0	64.0	62.7	55.1	50.9	50.0	43.6	39.8	39.5	38.2	37.2	37.1	31.9	27.4
NS III	-	7.2	8.2	9.5	17.1**	21.3**	22.2**	28.6**	32.4**	32.7**	34.0**	35.0**	35.1**	40.3**	44.8**
NS IV		-	1.0	2.3	9.9	14.1*	15.0**	21.4**	25.2**	25.5**	26.8**	27.8**	27.9**	33.1**	37.6**
NS V			-	1.3	8.9	13.1*	14.0*	20.4**	24.2**	24.5**	25.8**	26.8**	26.9**	32.1**	36.6**
Mus I				-	7.6	11.8*	12.7*	19.1**	22.9**	23.2**	24.5**	25.5**	25.6**	30.8**	35.3**
NS II					-	4.2	5.1	11.5	15.3**	15.6**	16.9**	17.9**	18.0**	23.2**	27.7**
L II						-	.9	7.3	11.1*	11.4*	12.7*	13.7*	13.8*	19.0**	23.5**
L III							-	6.4	10.2	10.5	11.8*	12.8*	12.9*	18.1**	22.6**
M V								-	3.8	4.1	5.4	6.4	6.5	11.7	16.2*
									-	.3	1.6	2.6	2.7	7.9	12.4*
L I										-	1.3	2.3	2.4	7.6	12.1*
M I											-	1.0	1.1	6.3	10.8
M III												-	.1	5.3	9.8
SS IV													-	5.2	9.7
M IV														-	4.5
SS V															-

Number of Significant Differences out of a Possible Total of 105

* = p = or <.05 (two tailed test):	16
** = p = or <.01 (two tailed test):	47
Total:	63

Table 8:B:4: Statistical Significance of All Possible Differences Between Overall Ratings of Courses for the Second Semester, 1965 (Fourth Semester of the ETV Project)

Course:	NS IV	NS II	NS V	Mus I	NS III	M V	L III	L I	L II	SS IV	M IV	M III	M II	SS V	M I
Rating:	62.3	60.5	59.5	57.5	52.1	50.4	47.0	46.7	46.1	41.5	41.1	39.1	36.3	35.0	32.1
NS IV	-	1.8	2.8	4.8	10.2**	11.9**	15.3**	15.6**	16.2**	20.8**	21.2**	23.2**	26.0**	27.3**	30.2**
NS II		-	1.0	3.0	8.4*	10.1*	13.5**	13.8**	14.4**	19.0**	19.4**	21.4**	24.2**	25.5**	28.4**
NS V			-	2.0	7.4	9.1*	12.5**	12.8**	13.4**	18.0**	18.4**	20.4**	23.2**	24.5**	27.4**
Mus I				-	5.4	7.1	10.5**	10.8**	11.4**	16.0**	16.4**	18.4**	21.2**	22.5**	25.4**
NS III					-	1.7	5.1	5.4	6.0	10.6**	11.0**	13.0**	15.8**	17.1**	20.0**
M V						-	3.4	3.7	4.3	8.9*	9.3*	11.3**	14.1**	15.4**	18.3**
L III							-	.3	.9	5.5	5.9	7.9*	10.7**	12.0**	14.9**
L I								-	.6	5.2	5.6	7.6*	10.4**	11.7**	14.6**
L II									-	4.6	5.0	7.0	9.8**	11.1**	14.0**
SS IV										-	.4	2.4	5.2	6.5	9.4**
M IV											-	2.0	4.8	6.1	9.0**
M III												-	2.8	4.1	7.0*
M II													-	1.3	4.2
SS V														-	2.9
M I															-

Number of Significant Differences out of a Possible Total of 105

*= p = or <.05 (two tailed test): 8

** = p = or <.01 (two tailed test): 59

Total: 67

Appendix C: Teacher Dissatisfactions With Each Course

The following tables show the complete results for all courses for the two semesters of 1965 on the course "dissatisfaction inventory." In these tables, the per cent of teachers teaching with each televised course making each of the seven kinds of complaints included in the inventory can be found for both semesters. The average for all courses for each kind of complaint also is included for each semester. For each kind of complaint, there are two entries for each course. The first is the per cent making the complaint. The second, in parentheses, is the deviation of this per cent, in percentage points, from the average for the complaint. A plus sign (+) indicates that the per cent making a complaint about a course was above the average, and a minus sign (-) indicates that it was below the average. For each semester, the kinds of complaints are listed in the order of their average for the semester. As a result, the order of the complaints is not the same for both semesters. For each semester, the courses are listed in the order of their overall rating. As a result, the order of courses also is not the same for both semesters.

Table 8:C:1: Teacher Dissatisfaction With Individual Courses for the First Semester, 1965 (Third Semester of ETV Project).

	Average for all courses.	NS III	NS IV	NS V	Mus.I	NS II
		72.2 *	65.0	64.0	62.7	55.1
Dissatisfaction:						
The programs cover too much material for the children to comprehend.	23.2	21.5 (-1.7)	30.8 (+7.6)	20.7 (-2.5)	20.7 (-2.5)	10.8 (-12.4)
The children are not able to see clearly objects, maps, and things which are shown.	18.1	19.0 (+.9)	17.5 (-0.6)	13.5 (-4.6)	14.2 (-3.9)	15.2 (-2.9)
The children learn only from the pre-program "motivation" and the post-program "follow-up", and not from the program.	13.0	8.9 (-4.1)	7.7 (-5.3)	4.5 (-8.5)	17.2 (+4.2)	8.2 (-4.8)
The programs entertain, but teach very little.	11.8	5.1 (-6.7)	3.5 (-8.3)	6.3 (-5.5)	9.5 (-2.3)	10.8 (-1.0)
The programs do not teach concepts, but only facts.	9.9	10.1 (+.2)	7.0 (-2.9)	3.6 (-6.3)	7.1 (-2.8)	11.4 (+1.5)
The programs teach little the classroom teacher cannot teach.	7.4	5.7 (-1.7)	4.9 (-2.5)	4.5 (-2.9)	7.1 (- .3)	3.2 (-4.2)
The television teacher does not have a good personality for television.	2.3	1.9 (-.4)	1.4 (-.9)	.9 (-1.4)	2.4 (+.1)	.6 (-1.7)

*Overall rating: Per cent of teachers saying that all of a course's televised lessons were "excellent".

(continued on next page)

Table 8:C:1: Teacher Dissatisfaction With Individual Courses for the First Semester, 1965 (Third Semester of ETV Project). (continued)

	Average for all courses.	L II	L III	M V	M II	L I
		50.9*	50.0	43.6	39.8	39.5
Dissatisfaction:						
The programs cover too much material for the children to comprehend.	23.2	11.9 (-11.3)	11.7 (-11.5)	21.8 (-1.4)	20.5 (-2.7)	9.0 (-14.2)
The children are not able to see clearly objects, maps, and things which are shown.	18.1	14.5 (-3.6)	13.6 (-4.5)	10.9 (-7.2)	18.6 (+.5)	26.9 (+8.8)
The children learn only from the pre-program "motivation" and the post-program "follow-up" and not from the program.	13.0	6.9 (-6.1)	14.9 (+1.9)	10.0 (-3.0)	13.0 (0)	18.6 (+5.6)
The programs entertain, but teach very little.	11.8	15.1 (+3.3)	23.4 (+11.6)	8.2 (-3.6)	11.8 (0)	24.6 (+12.8)
The programs do not teach concepts, but only facts.	9.9	12.6 (+2.7)	20.1 (+10.2)	4.5 (-5.4)	9.3 (-.6)	15.0 (+5.1)
The programs teach little the classroom teacher cannot teach.	7.4	4.4 (-3.0)	8.4 (+1.0)	8.2 (+.8)	7.5 (+.1)	9.0 (+1.6)
The television teacher does not have a good personality for television.	2.3	3.8 (+1.5)	2.6 (+.3)	.9 (-1.4)	1.9 (-.4)	1.8 (-.5)

*Overall rating: Per cent of teachers saying that all of a course's televised lessons were "excellent."

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Table 8:C:1 Teacher Dissatisfaction With Individual Courses for the First Semester, 1965 (Third Semester of ETV Project). (continued)

	Average for all courses.	M I	M III	SS IV	M IV	SS V
		38.2 *	37.2	37.1	31.9	27.4
Dissatisfaction:						
The programs cover too much material for the children to comprehend.	23.2	25.3 (+2.1)	14.6 (-8.6)	45.7 (+22.5)	24.6 (+1.4)	58.5 (35.3)
The children are not able to see clearly objects, maps, and things which are shown.	18.1	28.8 (+10.7)	21.3 (+3.2)	22.9 (+4.8)	21.0 (+2.9)	14.2 (-3.9)
The children learn only from the pre-program "motivation" and the post-program "follow-up" and not from the program.	13.0	27.6 (+14.6)	14.0 (+1.0)	13.6 (+.6)	15.9 (+2.9)	14.2 (+1.2)
The programs entertain, but teach very little.	11.8	15.9 (+4.1)	13.4 (+1.6)	5.7 (-6.1)	10.1 (-1.7)	14.2 (+2.4)
The programs do not teach concepts, but only facts.	9.9	11.8 (+1.9)	15.9 (+6.0)	7.9 (-2.0)	7.2 (-2.7)	4.7 (-5.2)
The programs teach little the classroom teacher cannot teach.	7.4	11.2 (+3.8)	12.2 (+4.8)	7.9 (+.5)	10.9 (+3.5)	6.6 (-.8)
The television teacher does not have a good personality for television	2.3	3.5 (+1.2)	2.4 (+.1)	2.9 (+.6)	1.4 (-.9)	6.6 (+4.3)

*Overall rating: Per cent of teachers saying that all of a course's televised lessons were "excellent."

Table 8:C:2: Teacher Dissatisfaction With Individual Courses, for the Second Semester, 1965 (Fourth Semester of ETV Project).

	Average for all courses	NS IV	NS II	NS V	Mus. I	NS III
		62.3*	60.5	59.5	57.5	52.1
Dissatisfaction:						
The children are not able to see clearly objects, maps, and things which are shown.	19.3	16.5 (-2.8)	19.1 (-.2)	14.5 (-4.8)	20.3 (+1.0)	20.8 (+1.5)
The programs cover too much material for the children to comprehend.	17.7	16.5 (-1.2)	12.5 (-5.2)	15.3 (-2.4)	16.9 (-.8)	18.6 (+.9)
The programs entertain, but teach very little.	11.8	3.9 (-7.9)	9.5 (-2.3)	6.1 (-5.7)	17.2 (+5.4)	7.6 (-4.2)
The children learn only from the pre-program "motivation" and the post-program "follow-up" and not from the program.	10.9	8.1 (-2.8)	10.3 (-.6)	5.7 (-5.2)	10.0 (-.9)	10.4 (-.5)
The programs do not teach concepts, but only facts	9.1	5.5 (-3.6)	11.7 (+2.6)	8.0 (-1.1)	8.9 (-.2)	9.8 (+.7)
The programs teach little the classroom teacher cannot teach.	8.7	8.1 (-.6)	6.6 (-2.1)	7.6 (-1.1)	7.5 (-1.2)	6.9 (-1.8)
The television teacher does not have a good personality for television.	4.2	2.6 (-1.6)	5.3 (+1.1)	3.1 (-1.1)	4.7 (+.5)	1.9 (-2.3)

*Overall rating: Per cent of teachers saying that all of a course's televised lessons were "excellent".

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Table 8:C:2: Teacher Dissatisfaction With Individual Courses, for the Second Semester, 1965 (Fourth Semester of ETV Project).(continued)

	Average for all courses	M V	L III	L I	L II	SS IV
		50.4*	47.0	46.7	46.1	41.5
Dissatisfaction:						
The children are not able to see clearly objects, maps, and things which are shown,	19.3	16.2 (-3.1)	15.0 (-4.3)	21.8 (+2.5)	16.0 (-3.3)	19.7 (+.4)
The programs cover too much material for the children to comprehend.	17.7	22.2 (+4.5)	9.6 (-8.1)	13.5 (-4.2)	9.1 (-8.6)	21.4 (+3.7)
The programs entertain, but teach very little.	11.8	3.8 (-8.0)	17.5 (+5.7)	19.9 (+8.1)	18.5 (+6.7)	7.7 (-4.1)
The children learn only from the pre-program "motivation" and the post-program "follow-up" and not from the program.	10.9	8.3 (-2.6)	12.7 (+1.8)	12.2 (+1.3)	14.4 (+3.5)	8.0 (-2.9)
The programs do not teach concepts, but only facts.	9.1	6.8 (-2.3)	8.6 (-.5)	8.5 (-.6)	13.0 (+3.9)	6.7 (-2.4)
The programs teach little the classroom teacher cannot teach.	8.7	10.5 (+1.8)	7.6 (-1.1)	9.5 (+.8)	11.6 (+2.9)	8.4 (-.3)
The television teacher does not have a good personality for television.	4.2	2.3 (-1.9)	1.9 (-2.3)	4.0 (-.2)	5.5 (+1.3)	6.7 (+2.5)

*Overall rating: Per cent of teachers saying that all of a course's televised lessons were "excellent."

Table 8:C:2: Teacher Dissatisfaction With Individual Courses, for the Second Semester, 1965 (Fourth Semester of ETV Project). (continued)

	Average for all courses	M IV	M III	M II	SS V	M I
		41.1*	39.1	36.3	35.0	32.1
Dissatisfaction:						
The children are not able to see clearly objects, maps, and things which are shown.	19.3	19.1 (-.2)	19.7 (+.4)	20.5 (+1.2)	21.8 (+2.5)	29.6 (+10.3)
The programs cover too much material for the children to comprehend.	17.7	23.6 (+5.9)	21.5 (+3.8)	16.8 (-.9)	31.9 (+14.2)	15.7 (-2.0)
The programs entertain, but teach very little	11.8	7.0 (-4.8)	11.8 (0)	17.4 (+5.6)	12.8 (+1.0)	15.9 (+4.1)
The children learn only from the pre-program "motivation" and the post-program "follow-up" and not from the program.	10.9	9.6 (-1.3)	10.9 (0)	18.7 (+7.)	9.7 (-1.2)	15.2 (+4.3)
The programs do not teach concepts, but only facts.	9.1	6.7 (-2.4)	7.3 (-1.8)	13.7 (+4.6)	12.5 (+3.4)	8.2 (-.9)
The programs teach little the classroom teacher cannot teach.	8.7	10.8 (+2.1)	7.9 (-.8)	11.8 (+3.1)	7.0 (-1.7)	9.3 (+.6)
The television teacher does not have a good personality for television.	4.2	3.5 (-.7)	3.9 (-.3)	5.5 (+1.3)	5.1 (+.9)	6.4 (+2.2)

*Overall rating: Per cent of teachers saying that all of a course's televised lessons were "excellent."

Reports In This Series

This series supplants all previous reports on the two years of research conducted on the Peace Corps Educational Television Project in Colombia. There are 12 volumes -- 10 research reports, each dealing with a different aspect of the project, plus *An Introduction*, concerned with the organization and conduct of the research, and a concluding *Overview*, containing a summary of the major findings and some general observations on the project.

The title of the series: *The Peace Corps Educational Television Project in Colombia -- Two Years of Research*.

The individual volumes:

An Introduction to Research Reports No. 1-10.

Report No. 1: The Project as a Whole -- Organization, Expansion, and Adaptation.

Report No. 2: The Project's First Semester -- Pupil Achievement, Teacher Attitudes, and the Work of the Utilization Volunteer.

Report No. 3: Improving the Effectiveness of the Utilization Volunteer and the Utilization of ETV by the Colombian Teacher.

Report No. 4: The Colombian Teacher and the Utilization Volunteer -- Making ETV Work in the Schools of a Developing Country.

Report No. 5: The Day-to-Day Job of the Utilization Volunteer -- Structure, Problems, and Solutions.

Report No. 6: Instructional Television for the In-Service Training of the Colombian Teacher.

Report No. 7: Improving the Effectiveness of Peace Corps Efforts to Change Teacher Behavior.

Report No. 8: The Televised Curriculum and the Colombian Teacher.

Report No. 9: The Volunteers.

Report No. 10: Feedback to the Peace Corps on Project Progress -- Some Models and Suggestion.

An Overview of Research Reports No. 1-10.

BRIEF FACTS

The ETV Project: In 1963, the Peace Corps, with the financial support of the Agency for International Development (AID), agreed to help the Colombian government establish a nationwide educational television (ETV) system directed primarily at improving public education. The initial Peace Corps goal was to provide televised instruction for primary school pupils and their teachers. It was hoped that eventually the system could also provide instruction for adults in literacy, health, agriculture, and topics of general interest, and for students beyond the primary grades. The ultimate Peace Corps goal is to establish an ETV system operated independently by Colombia. The project was inaugurated in Colombia at the beginning of 1964. It has had two major concerns in achieving its initial goal: the production of televised courses, and the building of a receiving network of schools with television in which teachers would build their own teaching around the instructional "core" provided by the telecasts. During the project's first three years (1964-1966), the number of Volunteers assigned to the project by the Peace Corps who have worked closely with Colombians toward these goals has ranged from 66 to 88. Of these, about half a dozen have been concerned with the installation and maintenance of TV sets in schools, between slightly more than half to two-thirds working with teachers in schools on making ETV more effective, and the rest with the production of telecasts. During the first year, 10 courses were telecast for pupils, each consisting of two 15 minute telecasts a week, for a weekly total of 300 minutes, exclusive of repeated programs; during 1965 and 1966, 15 such courses were telecast, for a weekly total of 450 minutes exclusive of repeated programs. In addition, individual programs and short courses have been telecast for teachers. When telecasting began in February, 1964, the receiving network encompassed approximately 200 schools, 1,000 teachers, and 38,000 pupils; by the end of 1964, 500 schools, 4,025 teachers, and 153,000 pupils; by the end of 1965, 925 schools, 7,000 teachers, and 260,000 pupils; and by the end of this year, 1,250 schools, 8,500 teachers, and 350,000 pupils. Telecasting has been over the open network of the Instituto de Radio y Television, a semi-government agency which telecasts commercially in the evenings, and which also has provided studio facilities for ETV. To achieve its ultimate goal, the Peace Corps has been concerned with building a permanent, financially viable, and competent organization to assume the Volunteers' functions. At present, Peace Corps participation is planned to continue up to the middle of 1968. For more on the ETV Project itself, see Report No. 1: The Project as a Whole -- Organization, Expansion, and Adaptation, this series.

The Research: Because Colombia was the first country in which the Peace Corps undertook an educational television (ETV) project, it decided to provide for close, thorough, and continuing research, and late in 1963 contracted with Stanford University's Institute for Communication Research. The Institute maintained a staff in Colombia actively engaged in research for the first two years of the ETV Project, from January, 1964, through January, 1966. The titles of the final series of reports on its studies appear on the previous page. For more on the research as a whole, see An Introduction to Reports No. 1-10, this series.